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MOTOR BOATING

15
CENTS



Buyers Reference
Export & Number



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You can enjoy the romantic beauty spots and the gay social life of the South with an ELCO as you can in no other way.

You can make your home on the 45 ft. ELCO, the famous "one-man" Cruiser, with its Private State-room, Electric Self-Starter, and accommodation heretofore only found on 60 footers.

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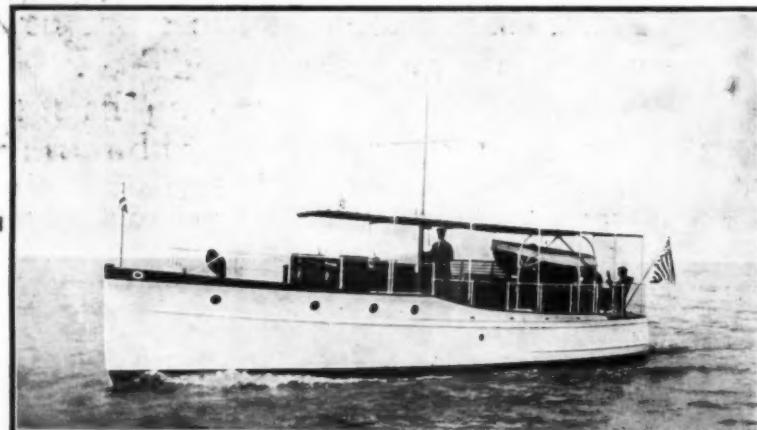
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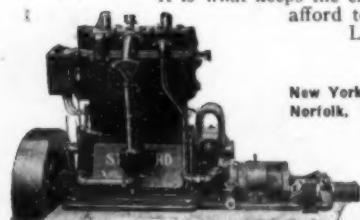
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Next they are bored in a way which makes any fault of alignment impossible.

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All "Buffalo" engines, high, medium or slow speed, are built with the closest attention to detail.

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"Buffalos" are built in sizes from 3 to 150 H.P.

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1274-1286 NIAGARA STREET

BUFFALO, N. Y.

In Portable Motors There's Just One



EVINRUDE



When you come to buy a portable motor for a rowboat or canoe there's no need for you to decide which is the best one for you to buy. Evinrude popularity has already decided that point for you--decided it so thoroughly that a careful buyer, in possession of all the facts, will take no other.

There are more Evinrude Detachable Rowboat Motors in actual use than all other portable motors put together. They have driven more boats more miles, and given more owners more satisfaction than any others. They have been officially adopted by fifteen governments. You'll find them gliding around in every corner of the earth.

Nothing but superior ability could have placed the Evinrude in the position it holds to-day. We are the largest manufacturers of rowboat motors in the world. If it were possible to build a better motor of this type, we would be the first to build it.

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We supply special Maxim Silencers for all 1913, 1914 and 1915 Evinrudes. The Silencer eliminates practically all noises of operation. No similar motor can use the Maxim Silencer. It is an exclusive Evinrude feature.

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The propeller turns freely in either direction and enables you to turn the boat within its length. There is no rudder to become entangled in the weeds, fouled or damaged by rocks and driftwood.

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The tiller is controlled by a shock-absorbing, Compensating Steering Device, which allows the tiller free range in either direction and permits steering without the exertion or strength which is necessary with a rudder.

**Evinrude Magneto Motor, 2 H.P., \$80.00
Evinrude Battery Motor, 2 H.P., 70.00**

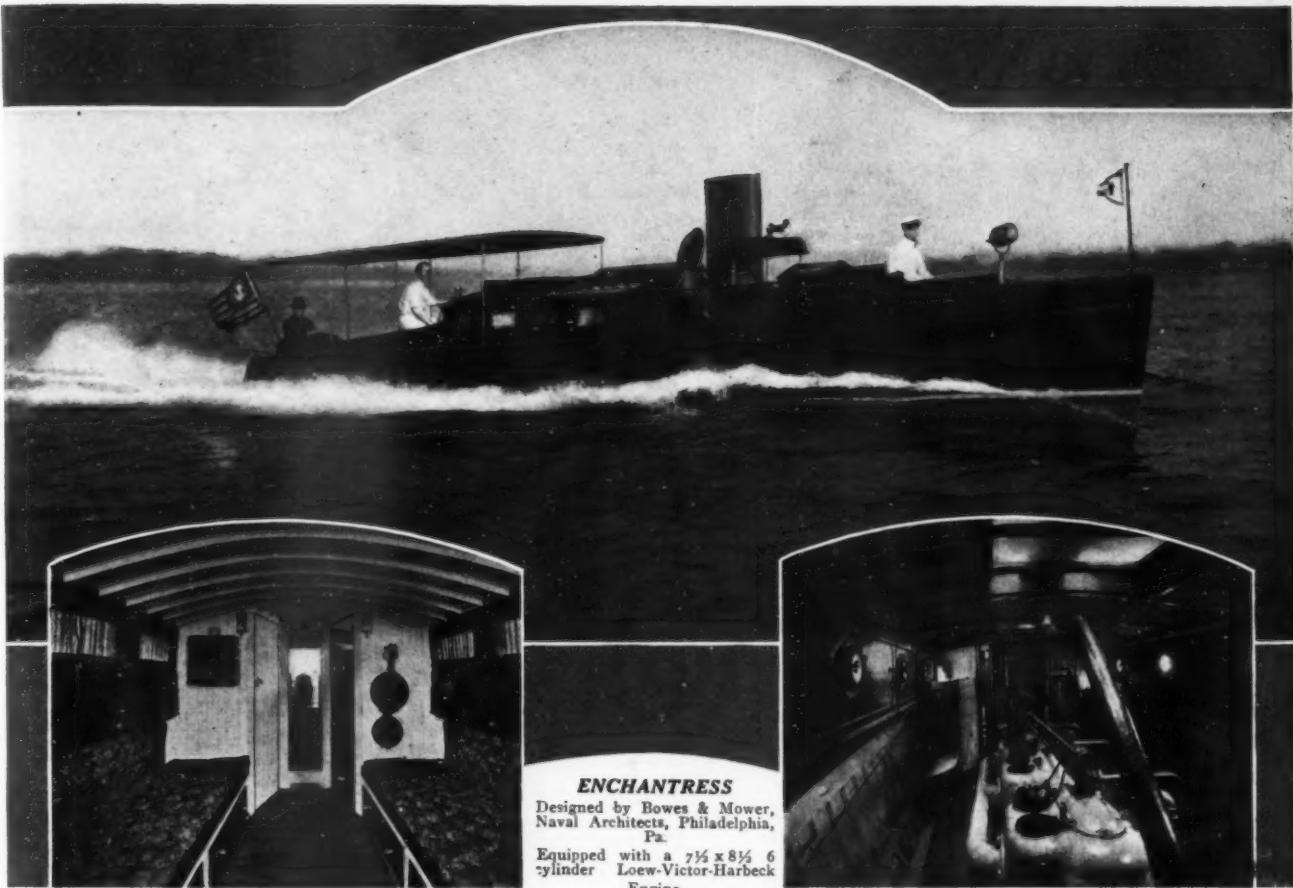
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1915 CATALOGUE READY JANUARY 1st

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Savannah, Ga., Stiles Ave. and W. Gaston St.
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1914
DATING

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Equipped with a $7\frac{1}{2} \times 8\frac{1}{2}$ 6
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Engine.

Our claim that the Loew-Victor-Harbeck is unquestionably America's finest marine engine is endorsed by the famous naval architects, Bowes & Mower, due to the performance of the $7\frac{1}{2} \times 8\frac{1}{2}$ in. Loew-Victor-Harbeck in the 46 ft. cabin cruiser Enchantress. Speed 25 miles per hour.

BOWES & MOWER

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CHARLES D. MOWER Lafayette Building CABLE BOMO

Chestnut and Fifth Streets, Philadelphia

October 22d, 1914.

LOEW VICTOR ENGINE CO.

Oakley and Oakdale Aves., Chicago, Ill.

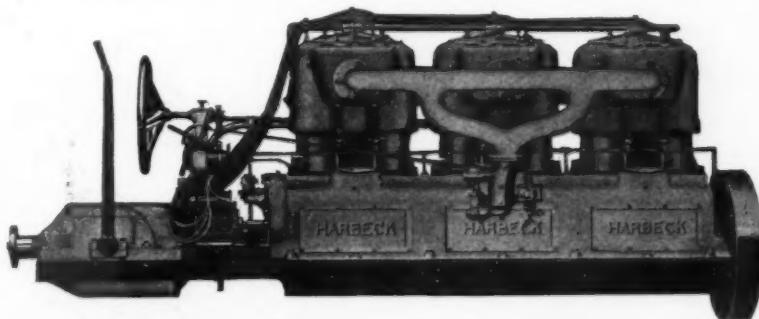
Gentlemen: We take pleasure in enclosing formal contract for two of your special six-cylinder Loew-Victor-Harbeck motors of the same type as the engine furnished us for the "Enchantress." These engines will be installed in a 72-foot express cruiser, capable of 22 statute miles per hour, which we are now designing and which will be built this winter under our supervision in a prominent Eastern yacht yard. We are

Yours very truly, **BOWES & MOWER.**

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Weight 2700 lbs.
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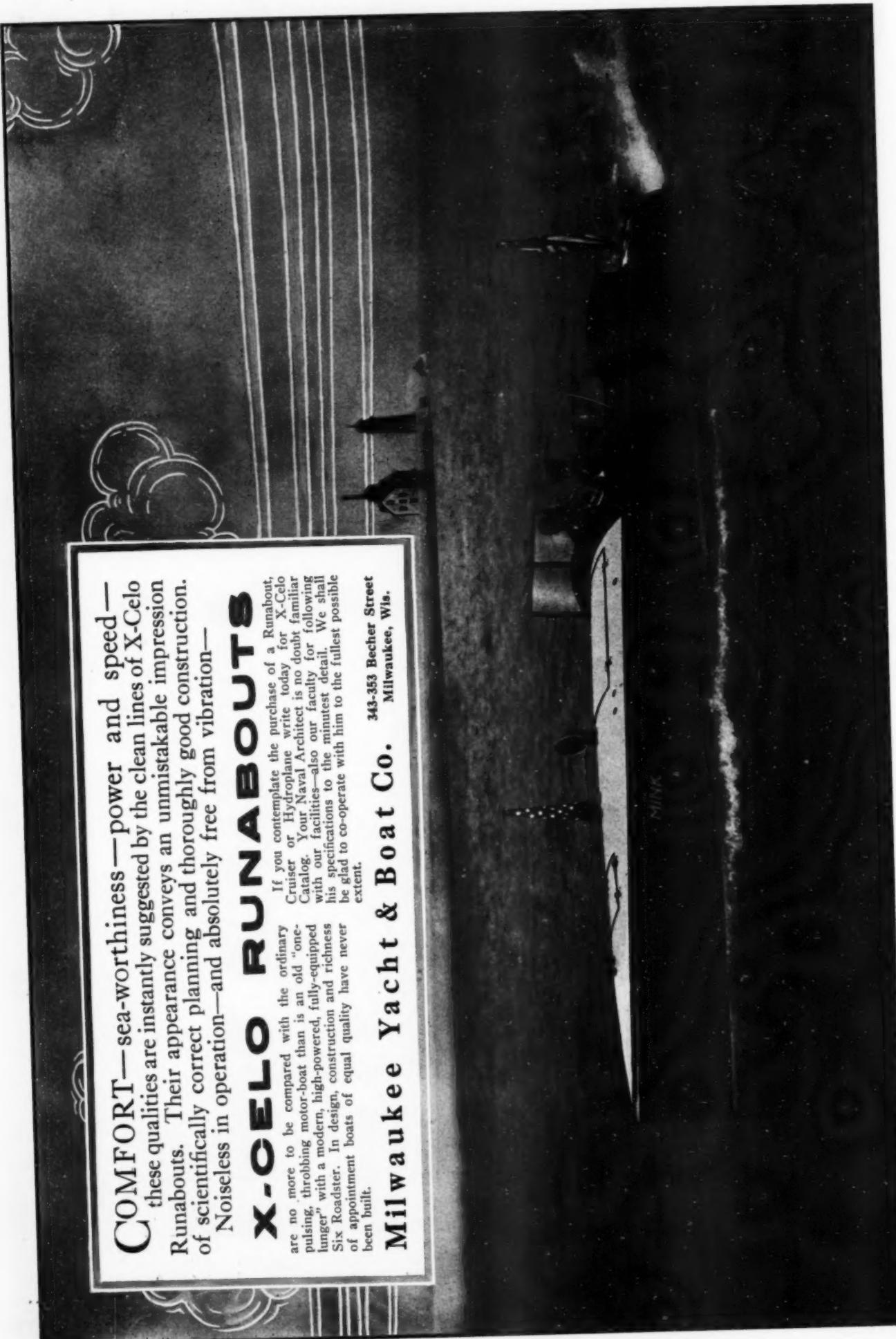
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Milwaukee Yacht & Boat Co.

343-353 Becher Street
Milwaukee, Wis.

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December, 1914

MOTOR BOATING

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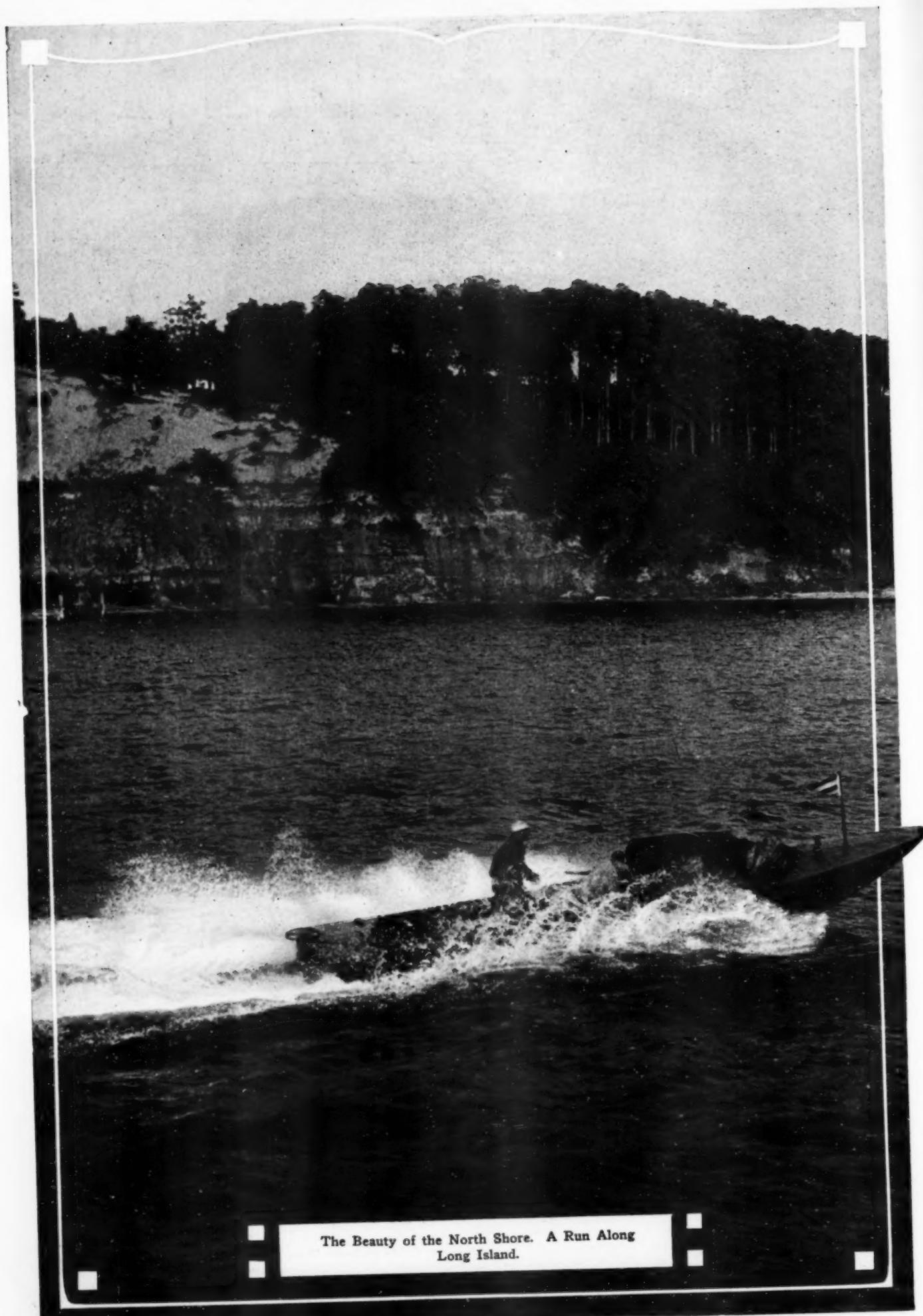
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The Beauty of the North Shore. A Run Along
Long Island.



For Motor

Outstanding Features of the Present
How the Material Has Been Class

Boat Buyers.

Buyers' Reference and Export Number
Classified and Divided for Reference.

IT IS with very great satisfaction that we give to the motor boating public of America, our annual Buyers' Reference and Export Number for 1914. Long since, this great annual special number has taken its place in the motor boating world, as a yearly record of progress and development in the marine motor industry.

As last year, this Buyers' Reference Number will be found to contain a great mass of material, which has been so carefully classified and segregated that the reader can easily locate any particular type of boat, motor or accessory in which he is particularly interested. In this way the present number of Motor Boating may truthfully be likened to a great catalogue of the marine motor industry. We are certain that our readers will agree with our own estimate of the 1914 Buyers' Reference and Export number, and in serving their needs we have attained the unwavering purpose of our editorial activities.

The first classification in the pages that follow is made to include representative American motor yachts and motor boats built in the year 1914. The first four pages are given up to showing twelve of the most representative boats of this year, which have already been described. These boats appear with photographs showing the profile, supplemented by their arrangement plan in a line drawing. This, we believe, gives a more comprehensive idea of the craft than when line drawings alone are used.

Then follow twelve pages of representative American motor yachts and boats built during the year 1914, and not previously described by us. Here again half tones and line cuts have been combined with very satisfactory results.

The next section is devoted to a compendium of American marine motors. The same system of arrangement that prevailed last year, for this section, has again been utilized. The motors are first grouped into two great classes, two-cycle and four-cycle. These are, in turn, subdivided according to the number of cylinders, and these subdivisions are also segregated according to their status as heavy-duty, medium-duty or speed plants. Each separate division and subdivision has its motors arranged in the order of their horsepower, beginning with the smallest two-cycle engine. In this way the prospective buyer can readily locate

any particular type of power plant in which he may be interested.

Our readers will notice in the present number a new motor classification—outboard motors. This new and popular type of power plant will be found to have received adequate treatment, the products of no less than twenty-two manufacturers being included.

Lack of space this year, due to the tremendous growth of the marine motor industry, compelled us to change the custom of other years, when we showed practically the entire line of every manufacturer. This time we are showing one model for each manufacturer, having first asked him to specify which one of his products he desired to have represented.

The section of the magazine directly following that devoted to motors, is given up to American motor boats of standardized design. Included in this section will be found forty different makes of standardized boats, the very cream of the motor boat building yards of this country. This branch of the motor boat industry is each year becoming a more important one, and its practice of putting out one highly developed model is approaching more nearly to that of the land motor industry.

The last section of the magazine is devoted to American motor boat parts and accessories. This, in turn, is subdivided into classifications, including reversing devices, electrical apparatus and general accessories. Our accessory section is this year more than fifty per cent. greater than the same section was last year.

At this season, it may not be out of order to look ahead for a moment at the year on the threshold of which we are standing. Some months ago, the outbreak of the great European war seemed to some timid souls to indicate a lean period ahead. There was a time of waiting, while the channels of commerce were being cleared and the routes of trade were being re-established. That time is past, and it is pleasant to know that the marine motor industry was one of the first to feel the impulse of the industrial awakening. To-day it is apparent that the motor boat trade is entering on an era of expansion and prosperity which will carry it to new heights.



A new Seabury express day-cruiser recently given a trial at New York.

The Golden Opportunity in Export Trade

Possibilities Open to the Manufacturers of American Motors and Motor Boats.

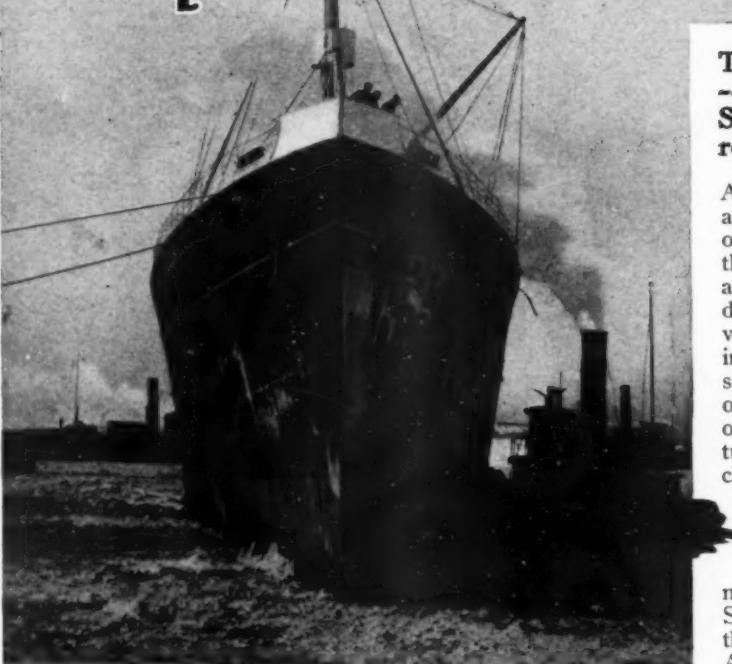
CANAL BOATS are being fitted up as ambulances to bring the wounded from the front to the Paris hospitals, according to press cablegrams received from France a few days ago. Why canal boats? Are we to assume that speedy motor boat ambulances are not being used on the innumerable waterways of France that connect even the most advanced lines at the front with the capital? This can hardly be the case, for the manifest advantages of the motor boat will quickly have been recognized by Frenchmen.

Motor boat manufacturers and enthusiasts on this side of the Atlantic have naturally followed the terrible developments in Europe as attentively and sympathetically as have other elements in our industrial world. Just how and to what extent motor boats are being utilized by the belligerent Powers, and what the results have been for American manufacturers of boats, and more especially of marine engines, are questions that are not to be answered specifically. However, as readers of these columns already know, Great Britain is making extensive use of the privately-owned motor boats of her citizens in the Motor Boat Reserve and, what is especially interesting to us, of course, has appeared as an extensive buyer of American gasoline marine engines for the further extension of this most valuable service. As dispatch bearers, the motor boats that are now being utilized by the British Government must be simply indispensable, while their assistance with searchlights and in a dozen different ways introduces elements into the war situation that are almost as novel and unprecedented as are the operations of aeroplanes and submarines.

The acknowledged fact of large orders being placed with American manufacturers of gasoline marine engines by or for the British Government leads straight to what is perhaps the strongest argument for their products which American manufacturers in this line can present to prospective customers throughout the world. If American gasoline marine motors are found sufficiently satisfactory by the British Government, that fact merely confirms the significance of the markets which these motors of ours have developed to such large proportions in the course of the past few years, in the very home countries of the most important competitors of our motor manufacturers.

No one will attempt to deny the excellent qualities of motors turned out by British manufacturers, while Danish and other Scandinavian motors are of acknowledged worth and are even shipped in considerable numbers to many foreign markets. Yet Scandinavia, the Baltic generally and the immediately adjoining countries, are probably to be ranked as the biggest of all buyers of American motors.

It would seem worth while, therefore, for a buyer in Cape Town or in Buenos Aires to consider this strongly suggestive condition in making up his mind whether it is to be an American or a European motor that he will decide upon. If



By B. Olney Hough.
Editor, American Exporter.

The Various Markets --Latin America, South America, Europe and Australasia.

American motors are sold, as all the world knows or ought to know is actually the fact, in Great Britain and Scandinavia in immediate competition with the very excellent motors made in these same countries, subjected to the handicaps of separation by thousands of miles from the manufacturers, a certain additional charge for transportation

from factory to buyer, even in some cases rather high import duties at destination—if the British and Scandinavian buyers even then prefer, as they do, American motors, then how can buyers in other

countries hesitate? The story of the export trade in American marine motors is one of steady as well as rapid growth.

Indeed, he must be a small and insignificant element in the trade here in the United States who does not count on the export demand for his motors as almost, if not quite, the equal in importance of his domestic trade.

Last year, the government's official fiscal year ending June, 1914, did not record unpreceded figures for the export trade of the United States as a whole. The same remark applies, of course, to the export trade of European manufacturing countries in general. Yet among the exceptions in our American export trade gasoline marine motors are notable. In this line American exports actually increased. We shipped last year 11,606 motors of this description to various foreign markets, or 666 more than the year before, and over 3,000 more than in 1912. Better yet, the grade of our motors was well maintained. The total value of motors we shipped last year was almost exactly \$1,600,000, an increase over 1913 of over \$13,000.

Talking the other day to a prominent manufacturer in this line I was particularly impressed with the fact that in the seven years since he first began to look for foreign markets he has developed his export trade to a volume of almost \$100,000 a year, which, I rather fancy from incidental evidence, is about one-half of this manufacturer's total production. That is a story which, it seems to me, ought to appeal forcefully to some other American makers of very excellent motors who have not thus far given the intelligent thought and study to the possibilities in foreign markets which it is evident enough these markets do deserve. I asked this manufacturer where he found his largest trade. His reply was amusing, to me at least, as well as surprising. Russia has proved his biggest market. He has over 500 motors working in Russia to-day of all sizes and of all characters. In reply to my question as to how he explained the popularity of his engines in Russia, he declared that it was largely because of the activity of his Russian agents, backed by the record of the engines in service. He asserts that up to the period when his Russian sales numbered 400 motors not \$100 worth of repairs had been ordered for these many motors in actual daily work.

Like a number of other American manufacturers, this man

has also found large markets in the Scandinavian countries, immediately in competition, as I have observed, with the very good motors made locally. That he counts his trade in Norway and Sweden second only in importance to Russia is another indication of how important the choice of a local agent, or the chance which puts a line into hands of a special agent, maybe, for this same manufacturer, who has this large and very satisfactory business in Russia and Scandinavia, ranks a bad fourth or fifth in Australia. A certain other American motor holds practically every record in that commonwealth. The explanation is that the agent here and the agent there turned out to be of the right sort as to character, ability, aggressiveness and the other desirable qualities, while another manufacturer has happened to get a superior agent in another country.

It is one of the curious developments of this industry that some of the most important representatives of American manufacturers were not, at the outset, connected with the commercial end of the business. The man who perhaps has sold more American motors than any other man in Scandinavia is a physician. He never thought about doing any business in motor boats, engines, or anything else, until he bought an American engine for his own use. So pleased with it was he himself, as were some of his friends, when, as a matter of acquaintance and friendship, he brought over a few more engines for people who enjoyed his hospitality in his original boat, that he ended by giving up his profession altogether, finding, by an exclusive devotion to the motor boat trade, an annual income two or three times what he was ever able to earn as a medical practitioner.

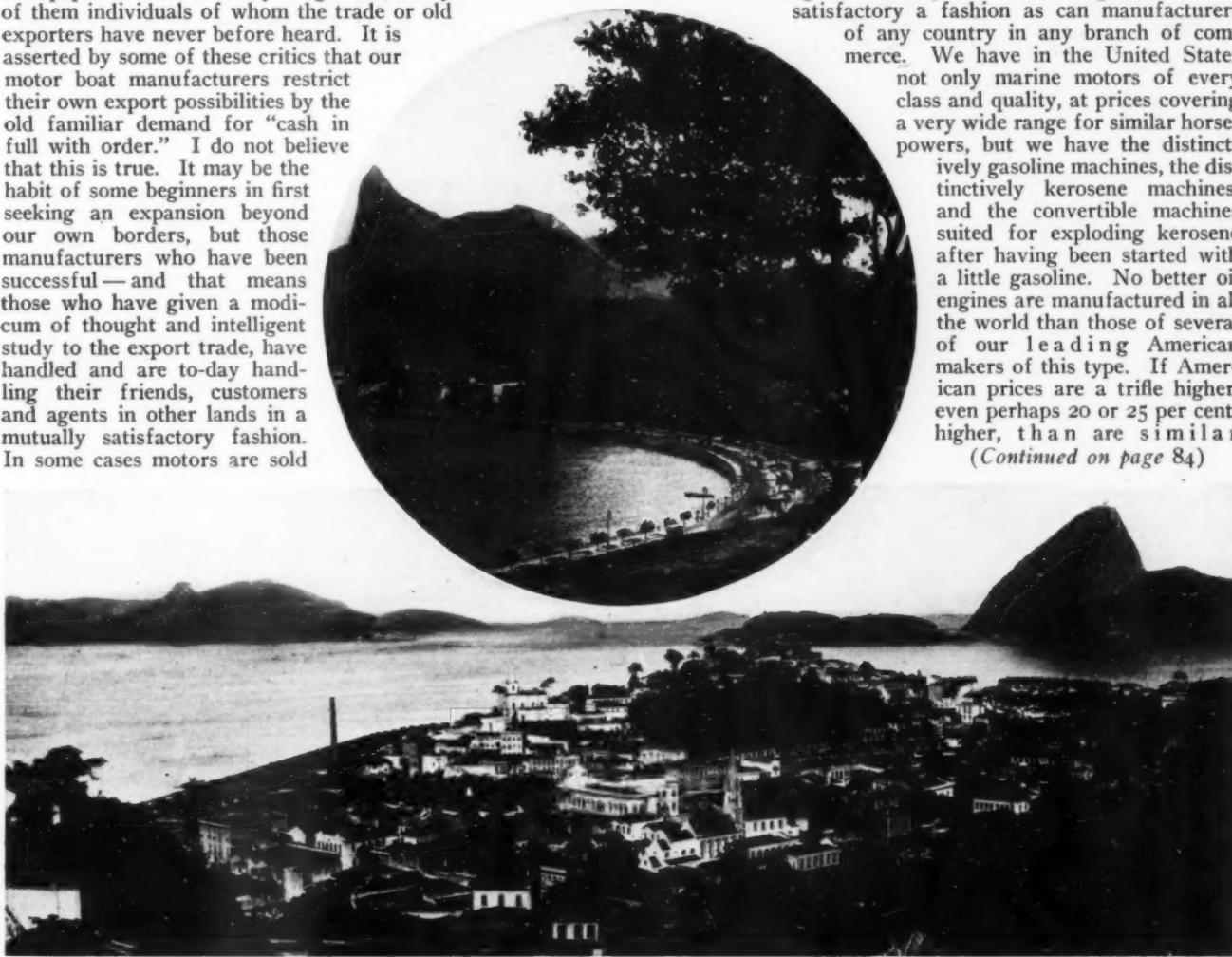
Critics innumerable of American export trade methods have developed in every direction since the outbreak of the war in Europe, and have attracted widespread attention to what are acknowledged to be resulting opportunities for the extension of our export trade. Engine manufacturers have by no means escaped the attention of these critics. A vast deal of tommyrot has been printed in practically every class of periodical that is published in the United States. A dozen so-called authorities have managed to get their effusions into print in the daily newspapers or the monthly magazines, many of them individuals of whom the trade or old exporters have never before heard. It is asserted by some of these critics that our motor boat manufacturers restrict their own export possibilities by the old familiar demand for "cash in full with order." I do not believe that this is true. It may be the habit of some beginners in first seeking an expansion beyond our own borders, but those manufacturers who have been successful—and that means those who have given a modicum of thought and intelligent study to the export trade, have handled and are to-day handling their friends, customers and agents in other lands in a mutually satisfactory fashion. In some cases motors are sold

and must be sold for cash. In others, where circumstances warrant, suitable credit terms are given, even supply depots stocked on some reasonable consignment basis, and a genuine effort made to cooperate with agents in every reasonable fashion that may be proposed by serious business men.

Of course, there are some propositions put up to American manufacturers by their foreign "prospects" which it is quite out of the question for them to accept, even with the best will in the world. Such a proposition, for example, was that of a certain agent for an American manufacturer who wished to put auxiliary motors in all of the very large fleet of fishing smacks for which his town was headquarters, but the fishermen were in no position to buy and install motors and pay for them in full in cash. To carry out this agent's project about twelve months' credit was involved with periodical payments, secured meanwhile by mortgages on the fishermen's vessels. Obviously, this was an arrangement which the manufacturer in America, four or five thousand miles away from the scene of operations, could not possibly accept. Although enjoying ample capital for his normal operations, the manufacturer was unable to extend a year's credit to these fishermen, as he would have been unable to undertake a dozen similar operations possible in other parts of the world. It is pleasant to know that instead of turning down the proposal in coldblooded, peremptory fashion, the export manager for this manufacturer handled it diplomatically, and, after suitable exchange of thoughtfully reasoned correspondence, it was found that the agent abroad was easily able to arrange with local bankers or capitalists to take care of this business on the terms required. The orders for the engines followed in due course and the trade progressed to the profit, both of the manufacturer and of the agent, and it is to be assumed the profit and satisfaction as well, of the fishermen.

This may appear a small or even an insignificant detail hardly worth dwelling upon, yet I believe it serves to illustrate my contention that the best of our American manufacturers are not subject to the criticism so commonly leveled at them, but, on the other hand, are handling their relations with foreign agents and buyers in as intelligent, wise and satisfactory a fashion as can manufacturers of any country in any branch of commerce. We have in the United States not only marine motors of every class and quality, at prices covering a very wide range for similar horsepowers, but we have the distinctively gasoline machines, the distinctively kerosene machines, and the convertible machines suited for exploding kerosene after having been started with a little gasoline. No better oil engines are manufactured in all the world than those of several of our leading American makers of this type. If American prices are a trifle higher, even perhaps 20 or 25 per cent. higher, than are similar

(Continued on page 84)



Two glimpses of Buenos Aires, showing that South America can use American motor boats and, furthermore, has the resources with which to buy them.

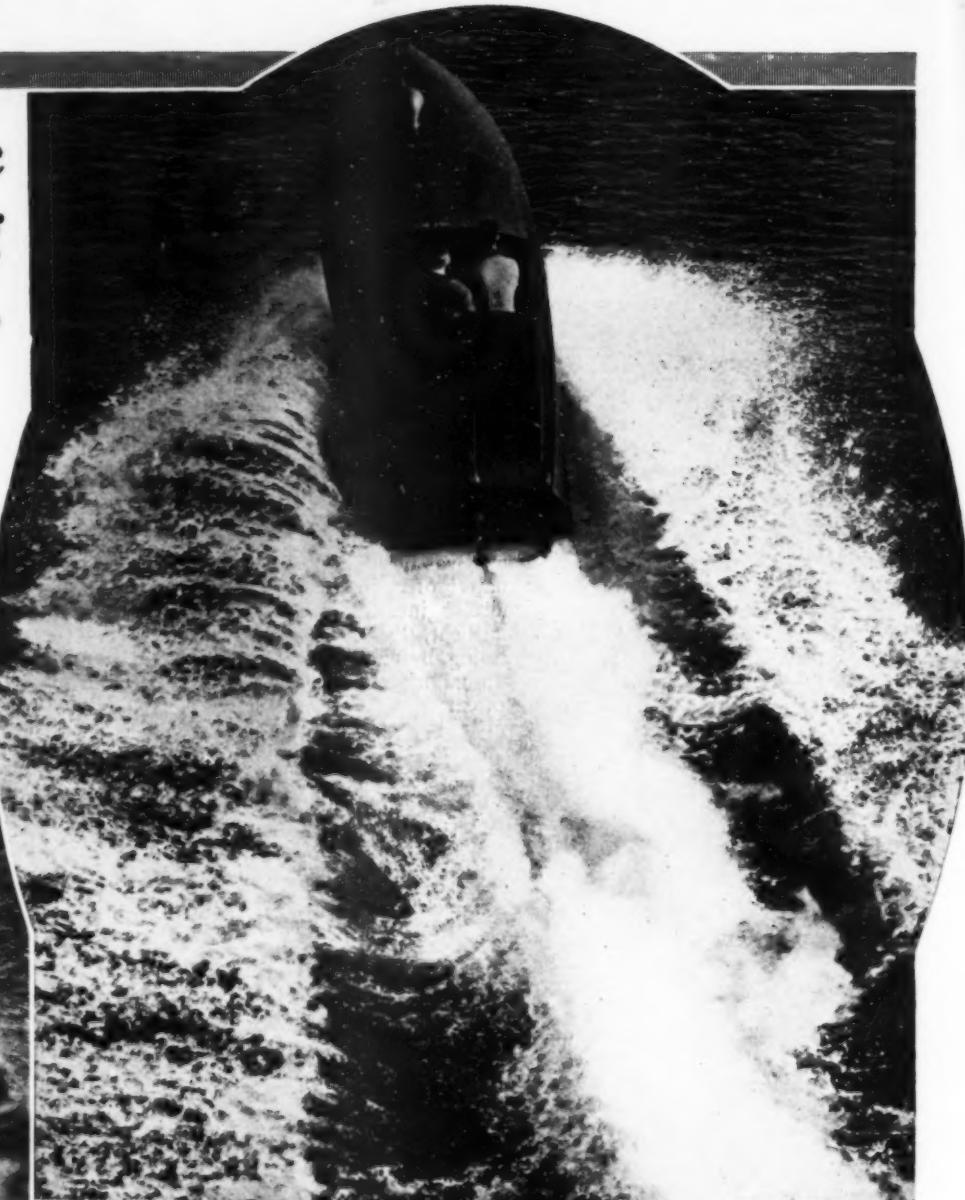
A New Wave Collecting Runabout.

ANOTHER addition to the popular fast runabout fleet is Beau, just finished, and now on her way to Florida. The photographs show her passing under a Harlem bridge on a tryout.

The boat was designed by F. K. Lord, of Bayonne, for Mr. Wadsworth, of New York, and is to be used as a runabout and ferry at Mount Dora, Florida.

The design of the boat is interesting, as her bottom incorporates some new features which were tried out successfully in the hydroplane Harpoon, and which tend to increase driving efficiency and reduce the bow spray.

The boat is 26 ft. long, $5\frac{1}{2}$ ft. beam,



and is fitted with a 90 h.p., 6-cylinder Van Blerck, running at about 1,200 revolutions, and is capable of 34 miles per hour. This can probably be increased.

The construction of the boat is heavy; the deck and topsides are $\frac{1}{2}$ -inch mahogany, and the bottom is $\frac{5}{8}$ -inch of the same wood. The engine beds extend throughout and there are deep floors spaced every foot. The seams are backed up with battens, and the whole hull construction is very stiff and strong.

The boat is ceiled and finished inside with mahogany. The gasoline tank is located amidship and the supply is by the Stewart-Warner system.

The boat is finished in natural wood color with white underbody, tan cushions and pyramidal rubber matting. At normal running speeds there is hardly any vibration.

Such runabouts are increasing in popularity, as they afford very high speed on a small expenditure.

REPRESENTATIVE AMERICAN-MOTOR-YACHTS - AND MOTOR BOATS -

Built in 1914

The Problem of Correct Design.

Some of the Ideas Which Should be Eliminated from the Plans as Impractical.
The Value of Experience in Determining What It Is Proper to Expect.

By William J. Deed.

We often see a number of miniature tramp steamers, battleships, torpedo boats, and such craft among the pleasure motor boat fleets. Often we see a boat with only some one or two features copied from the larger craft, for instance, a ram bow and torpedo stern, or simply a battleship's ram bow alone. It is safe to say that in hardly a single case has the innovation proven absolutely satisfactory from every point of view.

To be sure, a motor boat is a pleasure-giving proposition; it is created to please the owner and he pays for it. If he is pleased by a certain type of bow or sheer or variation in model, you say, it is the architect's business to give it to him. And, while there is much truth in this, yet the architect should not knowingly permit his client to invest his money in a craft which he knows is not as salable because of these eccentricities, nor does he without warning.

While every type of ship in the various naval, merchant marine, and commercial classes are fairly well standardized within fairly close limits, the pleasure boat is yet a free lance upon the sea of design, able to combine in one design characteristics of several types, as the minds of the owner and the architect are disposed. There really have been formulated no rules of design which restrict the type selection, although, numerically, one type will predominate among boats of one particular size selected at random. That is, of a hundred new cruisers 30'-50' long, fully three-fourths of them will be the raised deck type because this one has been found by experience to offer the most for the investment. Between 50' and 75' we find a wider variation in type, and between 75' and 100' length the types again become more standardized. These lengths are not necessarily arbitrary, being simply indicative of the approximate size.

The one distinguishing feature about any vessel is the sheer, not the number of stacks, or mast, or the proportions of the deck houses; these appear vividly to the eye, especially if ill-proportioned, too high, too long, or badly raked. A poor relation of freeboard to length will appear at a glance, but when all is said it is the sheer of a vessel that more than any other feature makes or mars her. Badly proportioned features show up surprisingly bold; but if all is correctly proportioned the eye will find the sheer line and rest there, and receive an impression favorable or otherwise as that line is sweet or ugly.

As a general rule, not applicable, to be sure, to every boat, an unbroken sheer is the handsomest and sweetest and there is much to be gained by a sheer approximating as nearly an unbroken line as possible. Compare the splendid, easy sweeping sheer of a fast steam yacht with the broken sheer of a tramp or cargo steamer, with forecastle deck, "islands"

amidships, the sheer alternately rising and dropping until it ends in the raised poop deck astern. Is there beauty in the latter? Does not the steam yacht "hang together" better, does not the eye cling to that sweeping sheer and do you not see the ship as an entity, rather than as a combination of cabins and decks, holds and hatchways? It has always seemed a pity that a working boat as typical of the commercial world as the tramp steamer should have been glorified by being made the model for a pleasure craft; why not model our automobiles after the dump cart? If it were gain to adopt the general features of the cargo steamer it would be O. K., but there really is no gain; if the craft be large enough to permit of two decks of quarters amidships in the "island," then the vessel is so large that she loses the appearance of a yacht and the evident attempt seems a failure since there is a gross, commercial appearance to the craft that is not as pleasing as a more yacht type would lend.

The passenger steamer is a more suitable type for exploitation in the miniature as pleasure craft, especially the type with unbroken sheer, except perhaps an inconspicuous raising of the ends to provide quarters in bow and stern or to add freeboard for better seagoing qualities. If the craft is small, say up to 60 feet the accommodations can be obtained under a trunk cabin; from 60 feet to 100 feet they can be had in a flush deck boat, and above 100 feet houses mounted on deck can be added. In some instances these figures can be changed, but the attempt to mount too large a house on a flush deck is bound to produce an unsightly craft, in addition to detracting from seaworthiness in small cruisers.

Flying bridges are a convenience in navigating the ship, they have a shippy look that pleases if the craft is large enough to carry one, and for observation purposes they are splendid. But their use is limited to craft which have full headroom under the flying bridge, that is, in boats on which the houses can be mounted directly on the main deck, and this means a boat 90-100 feet long. A sun deck with flying bridge is a very attractive feature, but it cannot but bring about the suggestion of an ill-chosen toy ship when applied on too small a craft.

Men who have followed the sea for years complain about the lack of sheer in modern motor yachts, and for the most part there is justice in their case, but not every yacht can have a great deal of sheer. The modern fast power boat requires fairly straight lines to give her that rakishness and dash that we like to see in a fast boat. In a slow seagoing motor boat sheer could not be given to provide freeboard enough forward to keep her deck dry, since it would necessitate an excess of freeboard that would offer windage and make a hard steering craft with the wind off the

bow. The large ocean liners even do not possess enough freeboard to keep the water off their decks; freeboard must bear a direct relation with length and draught. But we often see ludicrous attempts to give a 40-footer the freeboard of a 50-footer with the result that a much worse sea boat is had than if there were not any attempt made at excessive freeboard. A high bow and low topsides aft is not as good as one with less difference in height of freeboard. In regard to the sheer line, the lowest point is usually about two-thirds of the length abaft the stem, from which point in any cruising type the sheer should rise somewhat toward the stern and somewhat more toward the bow. A boat in which the lowest point of the sheer is at the very stern, excepting speed boats, is not the best looking boat, especially one with a compromise or whaleboat stern where some squatting occurs, in which event the appearance is much spoiled by the seemingly great drop in freeboard aft, while turning the sheer up toward the stern adds much to the appearance whether squatting or running on an even keel.

It is the little things that count—the details of form, of sheer, of proportion. The slight variations in the sweep of the sheer ribbands, the exact point at which the sheer finds its lowest point, and the relative height of raised and main sheer lines are important. We see too many home-built small cruisers that are badly off in regard to these details, their extremely high bows and very low sterns harmonizing not at all. The extremely sudden drop in height of freeboard destroys all symmetry. The type of small raised deck cruiser with a raised deck cabin at both bow and stern is a good type since the added freeboard aft adds to the seaworthiness of the craft, balances better with the higher freeboard forward, and adds to accommodations. It utilizes waste space. It is a common sense type. But in the raised deck cruiser with no after cabin a little more freeboard aft and a little less forward would tend toward a better boat, a more symmetrical craft. But in boats under 40' it is not easy to obtain the headroom called for (and this is usually six feet clear) without pretty good freeboard. This matter of headroom in boats of this size regulates the whole thing, influenced often by shoal draughts. In any cruiser full headroom is one great big feature of comfort, but in the 26' or 28' cruiser one must not look for it. From close to 30' up it can be had by close figuring on the designer's part, and close work and a knowledge of the possibilities of the dimensions of the boat is surely needed to get full headroom in an orthodox 30' cruiser. Greatly increasing the depth as well as the breadth makes a logy boat unless great care is used. In boats of the smaller types do not look for too much headroom; better take 5'8" and have a good looking, symmetrical craft than insist on 6'0" clear

(Continued on page 88)

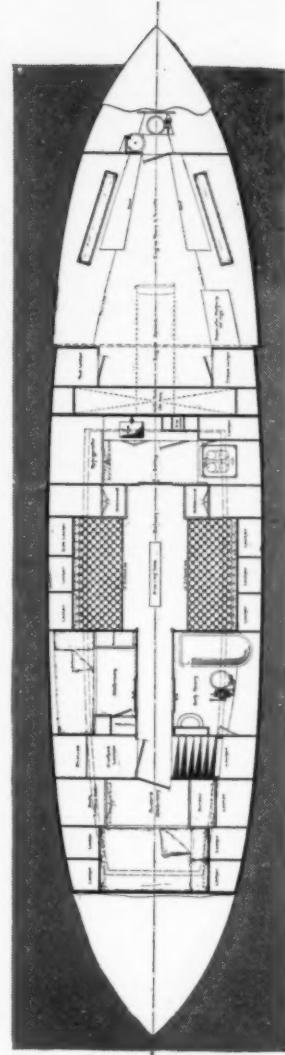
Typical American Motor Yachts



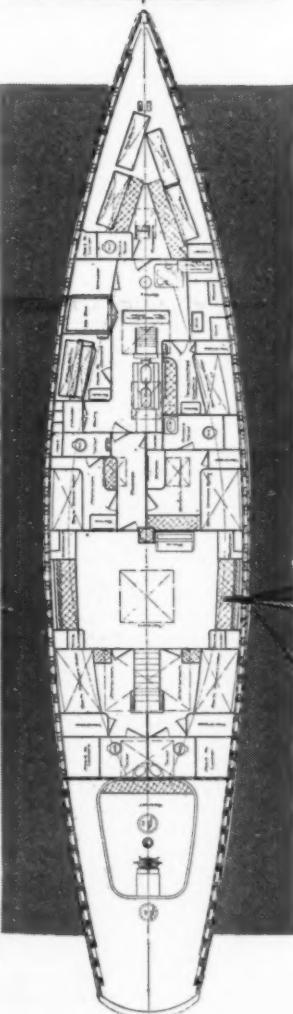
Florence, the largest motor yacht afloat; is 128 feet long by 20 feet beam. This boat was designed by Gielow & Orr, built by George F. Lawley & Son, Corp., and is powered with two 6-cylinder, 200 h.p. Winton motors.

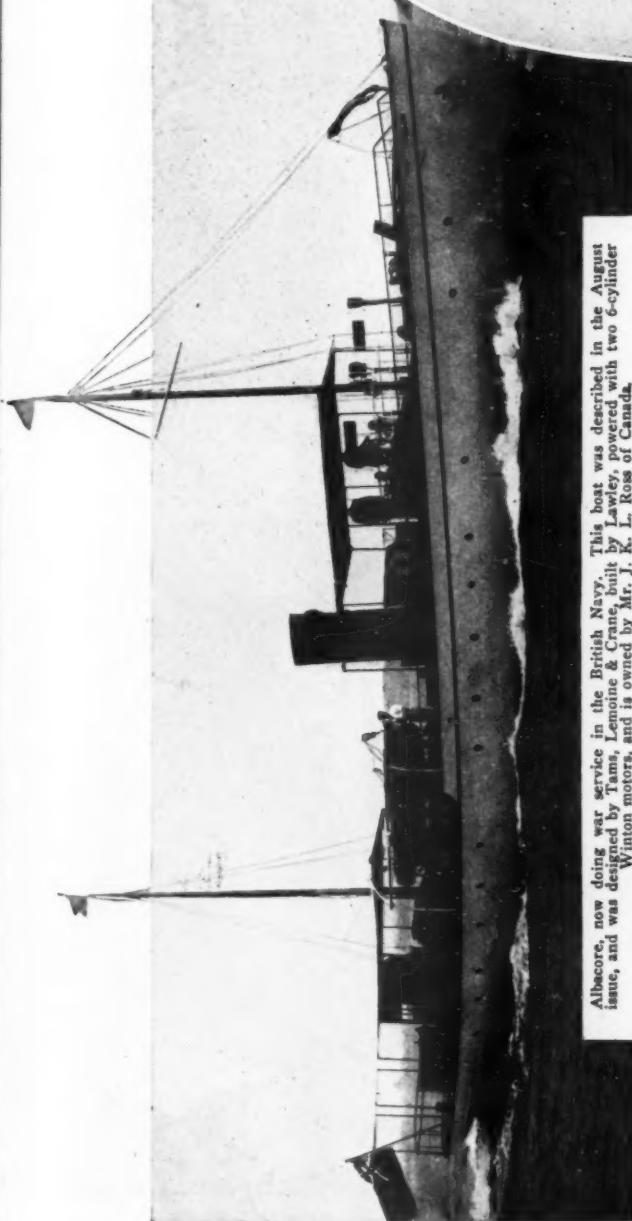


Catalina, 63 ft. by 13 ft. 6 in., designed and built by Frederic S. Nock, owned by Charles S. McCallum and powered with a 4-cylinder Twentieth Century motor. This boat was described in the November issue.

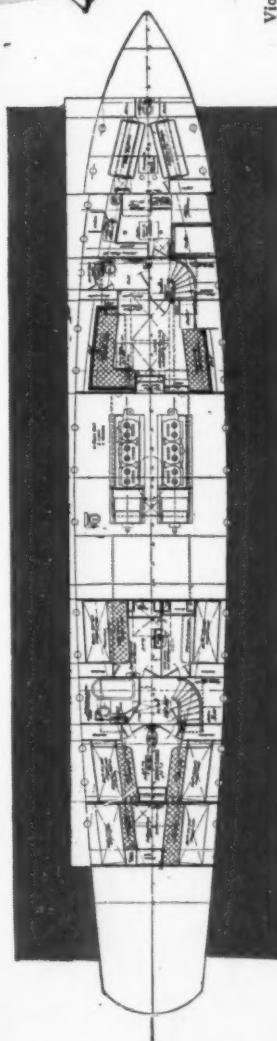


Astra, a 100-foot deep sea auxiliary schooner designed by Cox & Stevens, Co., and powered with a 75 h.p. Standard motor. Described in the August issue, she is owned by Mr. Fred S. Jones.



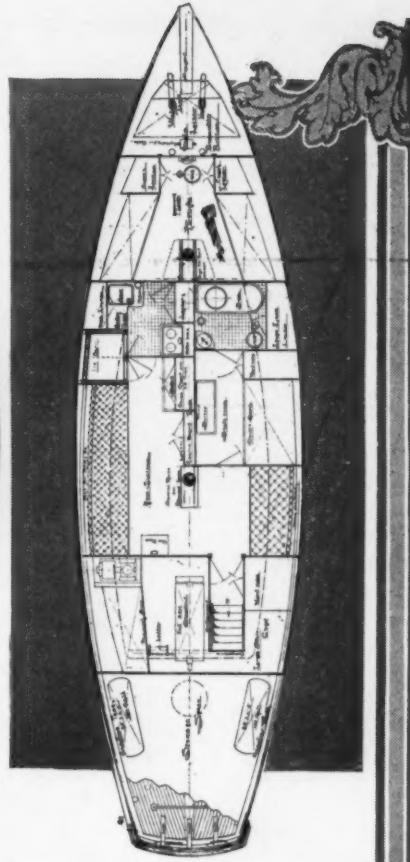
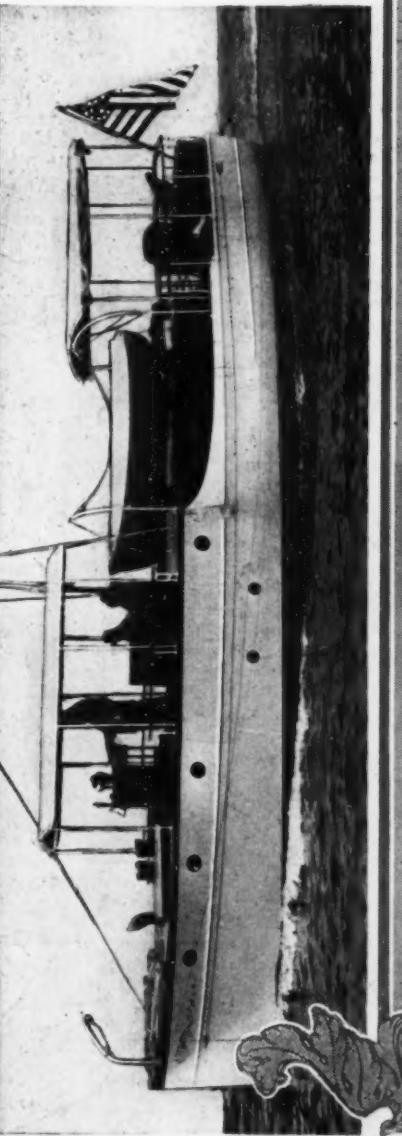


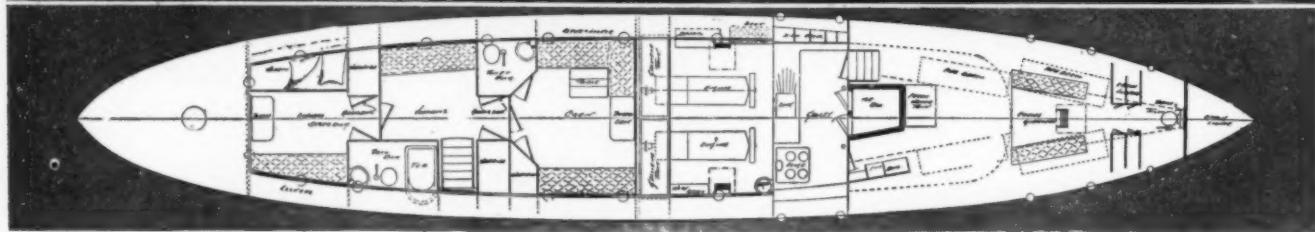
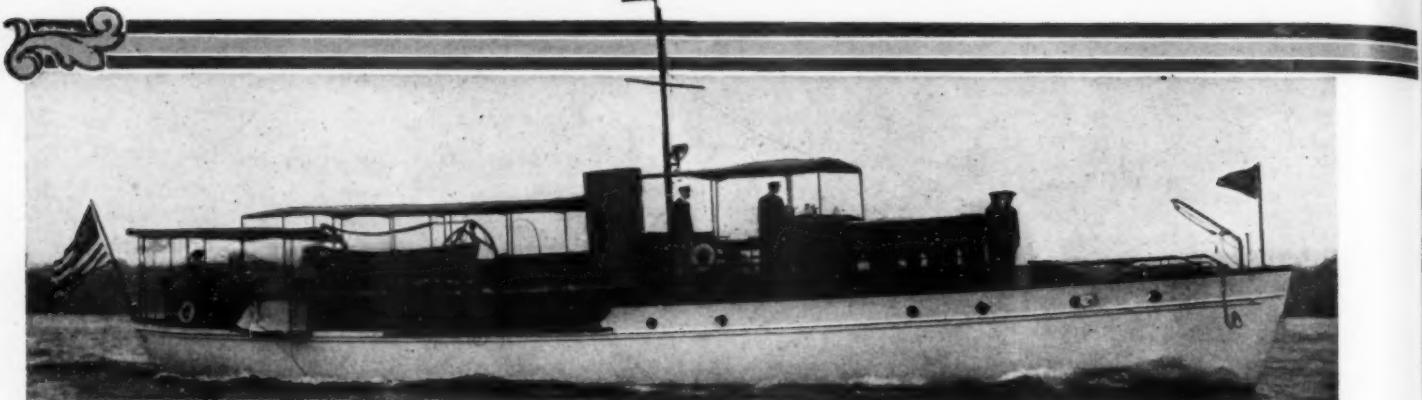
Albacore, now doing war service in the British Navy. This boat was described in the August issue, and was designed by Tams, Lemoine & Crane, built by Lawley, powered with two 6-cylinder Winton motors, and is owned by Mr. J. K. L. Ross of Canada.



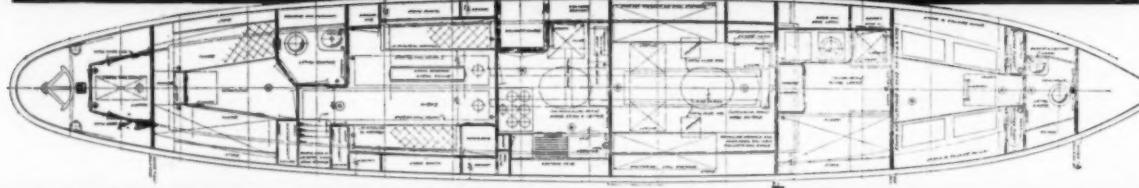
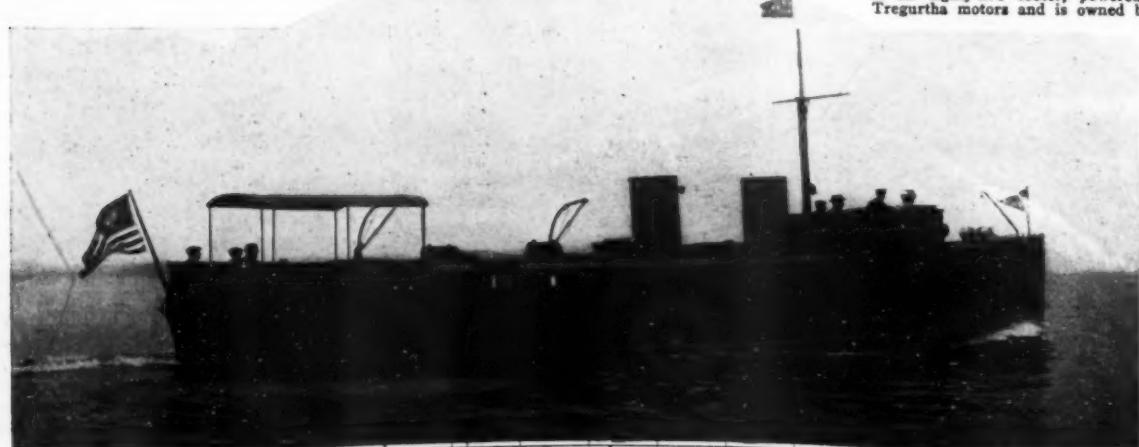
Amalia II, owned by Mr. Carl Reinchold, of New York and Eng. Co., and powered with one of their beam, and was prominent during the past summer. Amalia II was described in the July issue.

Viola II, a 97-foot auxiliary top-sail schooner, designed by J. Murray Watts, built by Smith & Williams, cylinder Standard motor, and is owned by Marshall Jones, Jr. This boat, in Southern waters early this year, made an extensive cruise which was described in the July issue of Motor Boating.

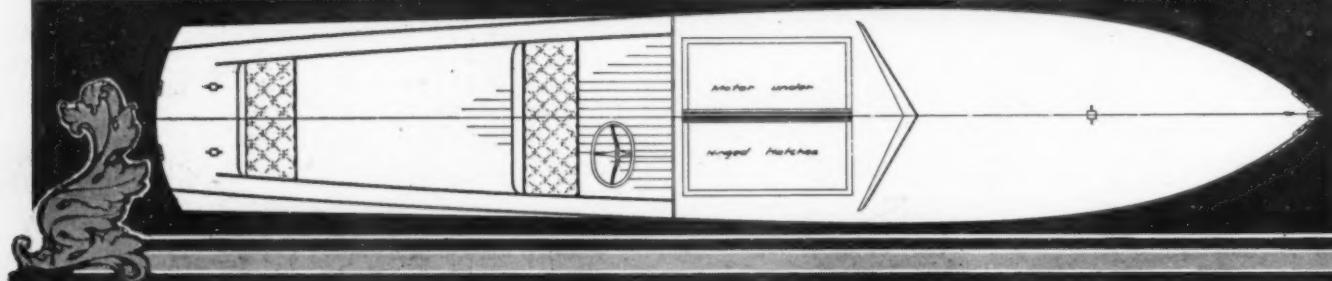




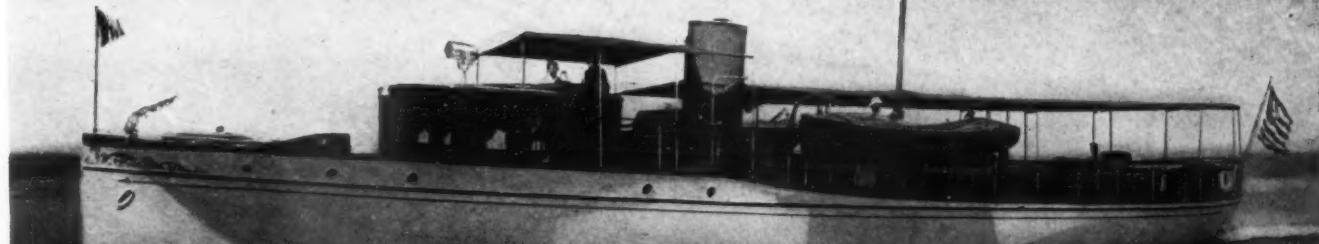
Paloma, designed and built by Murray & Tregurtha, of Boston, and described in the November issue. This boat is an eighty-five footer, powered with two Murray & Tregurtha motors and is owned by Mr. D. L. Pickman, of Beverly, Mass.



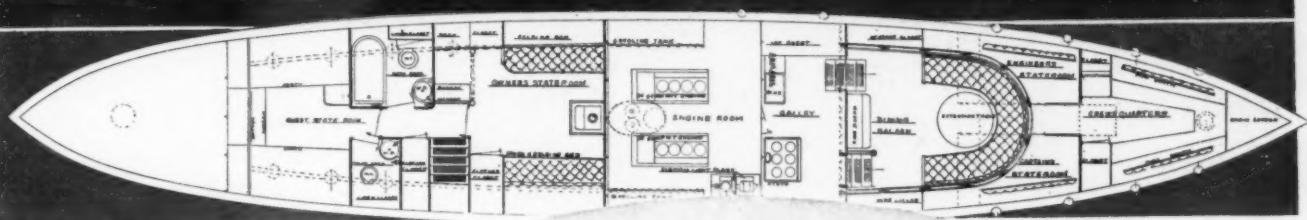
Ensign, a cruiser which has attracted a great deal of attention during the past summer, being designed by Swasey, Raymond & Page, of Boston, built by Brit Bros. and powered with a 6-cylinder Sterling motor. This boat which is sixty-eight feet long, was described in the July issue.



Baby Brown, one of the fastest runabouts in New Bedford, owned by Mr. Manuel Andrews and built from one of Mr. Wm. H. Hand, Jr.'s designs. This boat has an overall length of 25 feet and a beam of 4 feet 6 inches.



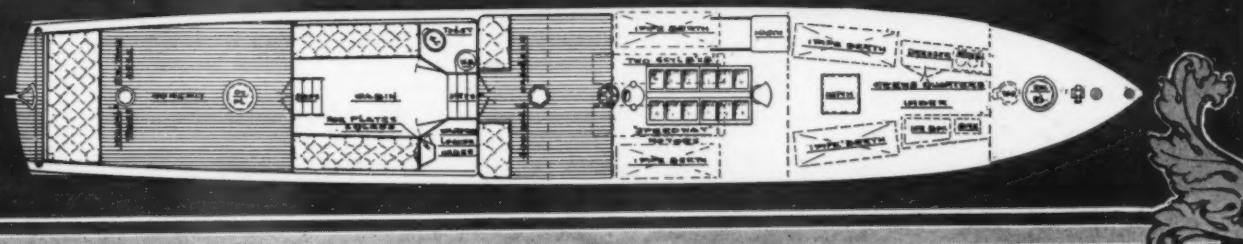
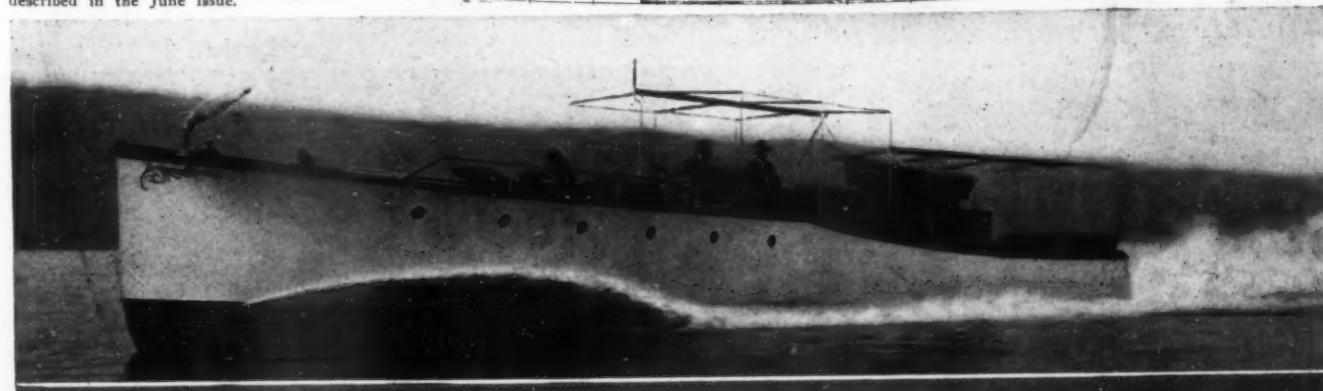
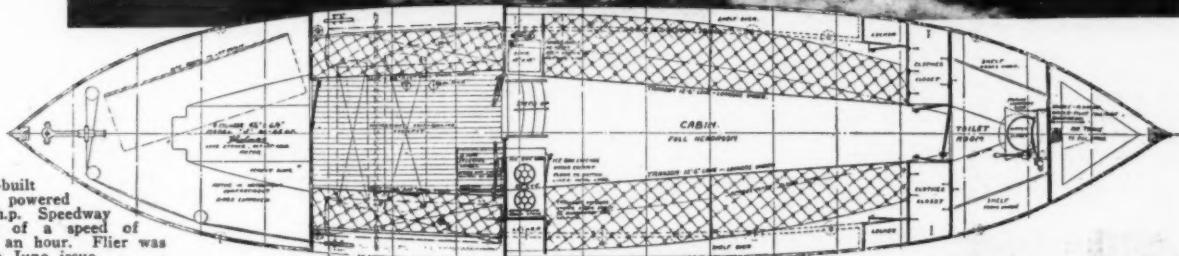
Minerva, a Luders designed and built eighty-footer, described in the October issue. This boat is owned by Mr. Henry Schwartzwalder, of New York, and is powered with two 6½ by 9-inch Sterling motors.



Answer, formerly named S. O. S., a Holmes life boat cruiser, powered with a 4-cylinder Holmes motor, which was described in the July issue. This boat is thirty-six feet in length, has a large cabin forward, and a Model J 20-25 h.p. motor located in the after engine-room.



Flier, a Seabury-built sixty-six-footer powered with two 20 h.p. Speedway motors, capable of a speed of nearly 30 miles an hour. Flier was described in the June issue.



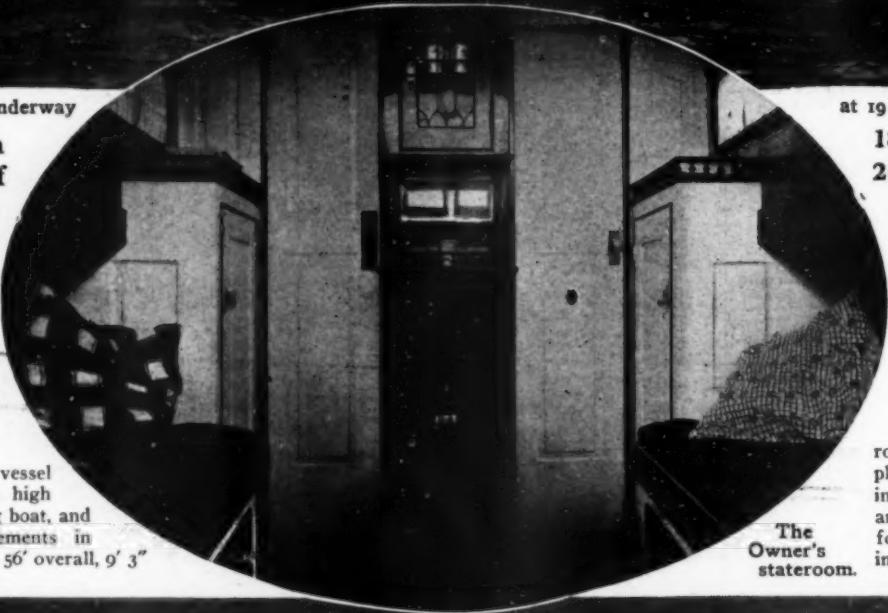
A High Speed - 56 Footer



Wilfreda, underway

A 56-Footer with of a Speed of

THE accompanying plans and photographs show Wilfreda, designed by Bowes & Moyer, the Philadelphia Naval Architects, for Mr. John M. Rutherford, of Port Washington, Long Island. The boat was built last spring by the Essington Shipbuilding Company. The vessel was designed to be a high speed sea-going cruising boat, and has met these requirements in every way. Wilfreda is 56' overall, 9' 3" beam and 3' draft, and is very similar in shape to the high speed express cruisers this firm has been turning out for the last two years. In outboard appearance Wilfreda is similar to some of the English



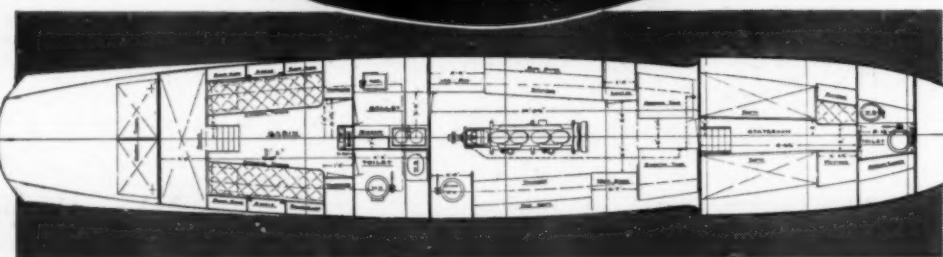
The
Owner's
stateroom.

at 19 miles.

180 H.P. Capable
20 M. P. H.

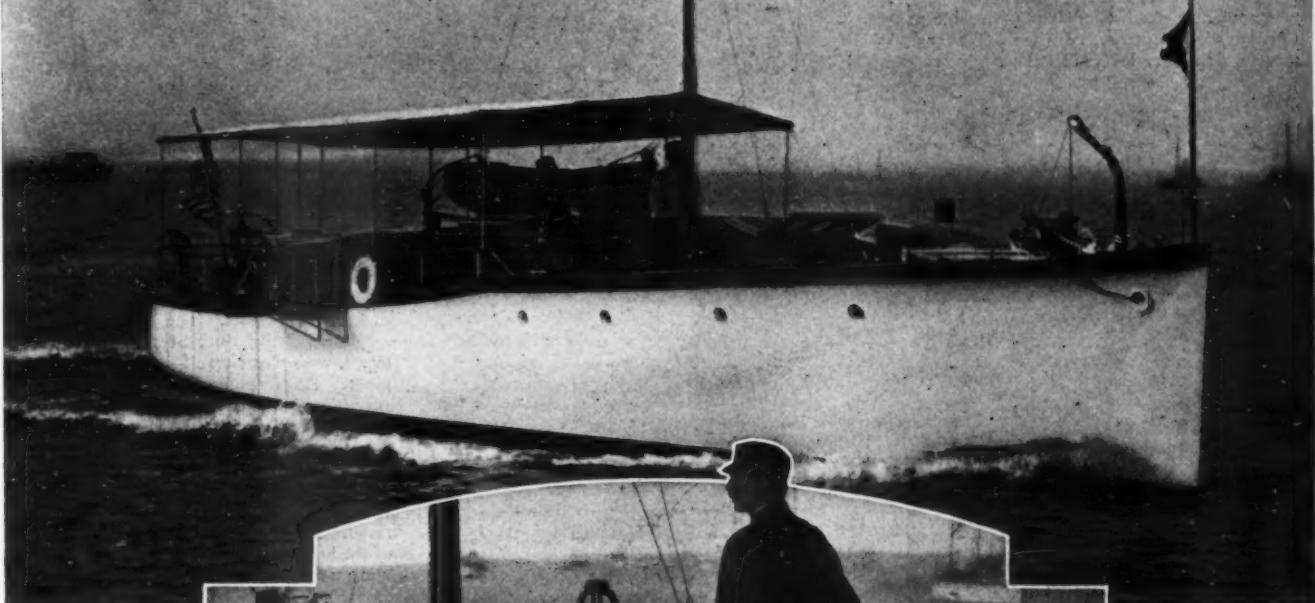
vidette or dispatch boats, and at a distance gives one the impression of being a small torpedo boat.

The accommodations below are extremely large for a boat of this type. Forward there is a comfortable stateroom with two berths, plenty of drawers, hanging locker, transom seat and with a toilet room forward. The headroom in the stateroom is obtained by the high raised deck forward. The bridge is located directly aft of the high raised deck, and is dropped about 10 inches to give the helmsman a clear view.



The 8-cylinder, 180 h.p. Sterling motor and the crew's quarters forward.

A Rational 53 Foot Raised Deck Cruiser



Elsana III.

ONE of the most beautiful, as well as most comfortable power yachts of the past season, is Elsana III, designed by Morgan Barney and built at the yard of Louis Anderson,



New London, Conn. The owner of Elsana III is Mr. Henry C. Pearson, of New York, who is Chairman of the Regatta Committee of the Columbia Yacht Club. This is the fourth boat Bridge, looking forward.



The main cabin, which is eleven feet long and contains two spring berths, chifonier, side board, writing desk, etc.

that Mr. Pearson has built, all of which have been designed by Mr. Barney, and it represents the accumulated experience Mr. Pearson has obtained in building and using his preceding boats.

The construction of *Elsana III* is unusually strong and substantial. The keel is seven inches wide and of unusual depth. The timbers are of oak, and the planking is one and one-quarter inch hard pine. The deck, two inches thick, is of white pine. The cabin houses and all deck trimmings are mahogany, the stateroom is finished in bird's-eye maple, and the main cabin in solid panelings of mahogany. There is a large bridge deck which is the real living center of the boat. This is supplemented by a moderate sized after-deck with wide passage-ways leading to it. All the machinery and heavy weights are located in the engine-room,



The stateroom, finished in bird's-eye maple.



The spacious afterdeck on *Elsana III*.

which is directly under the bridge, and as this is placed in approximately the center of the boat, an unusually fine distribution of weights results. The power plant is a 4-cylinder heavy duty Sterling engine, $6\frac{1}{2}$ " by 9", with electric self-starter and lighting plant. At four hundred revolutions the speed has been ten and a half miles, and at four hundred and sixty-five revolutions the speed is eleven and one-half miles.

The accommodation plan of *Elsana III* shows a comfortable forecastle forward, with berths for two men and lavatory and toilet. Next aft, extending the full width of the boat, is the galley containing the Shipmate stove, a large ice-chest, and ample storage room. The galley opens into the main cabin, which is followed by the stateroom having toilet, chiffonier, etc.

Pointer, A Diesel-Powered Boat.

Pointer, a service boat belonging to the Maryland Steel Company, Sparrow's Point, Maryland, was designed and built as a service work boat, to be operated by the owners in the harbor of Baltimore for towing and carrying freight. For this service it was necessary to have a heavy duty engine that would

be efficient in towing, and also an engine that would operate at a minimum cost. The speed attained by this boat is really remarkable, it

showing a speed of 10.4 miles, which is very good for a boat of this heavy construction.

Pointer, a 54 ft. x 12 ft. 4 in. boat, drawing 4 ft. 2 in. of water, and having a displacement of twenty tons. The engine is placed forward, under a hatch, the controls being carried up to the pilot house.

The engine installed is a 3-cylinder, 50 h.p. Fulton-Diesel, having a bore and stroke of 8x9, and the normal speed is 400 r.p.m. This engine swings a 38x38 in., 3-blade propeller.



Pacific Practice

A 65-Footer with Deck Cabin and

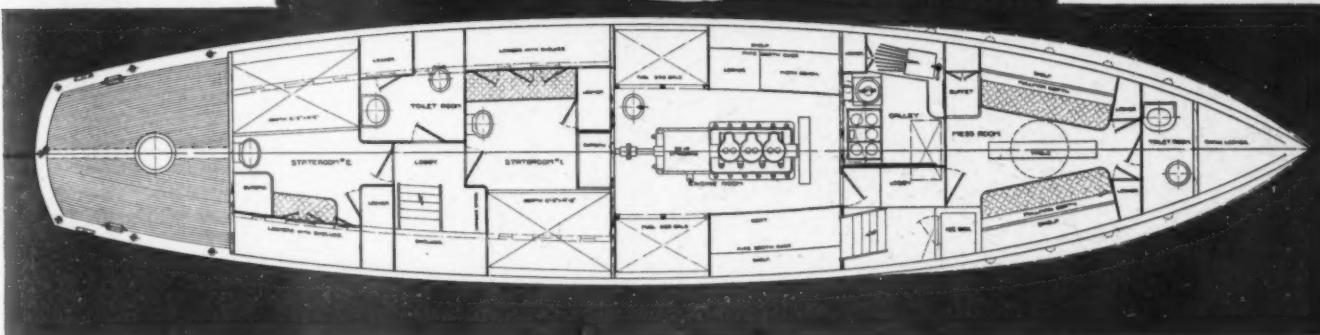
OLYMPIC is owned by Mr. Frank Wright, a member of the Seattle Yacht Club, who uses the yacht very extensively for cruising purposes and for traveling between Seattle and the plant of the Carlyle Packing Co., a salmon cannery at Lummi Island, Washington, of which Mr. Wright is proprietor. Built in 1914 by the E. W. Heath Shipyard from plans furnished by Lee & Brinton, naval architects of Seattle, the dimensions are, length overall 65'-0", beam 13'-6" and draft 5'-0". She is equipped with a 50 h.p. heavy duty San Francisco Standard engine.



Pilot House and Raised Fore Deck.

system of hot water with radiators in all cabins and heater located in the galley. The electric light plant consists of a 60-volt 32-ampere dynamo, belt-driven off the main engine and operated in connection with storage cells. An eight-inch searchlight is located on top of the pilot house.

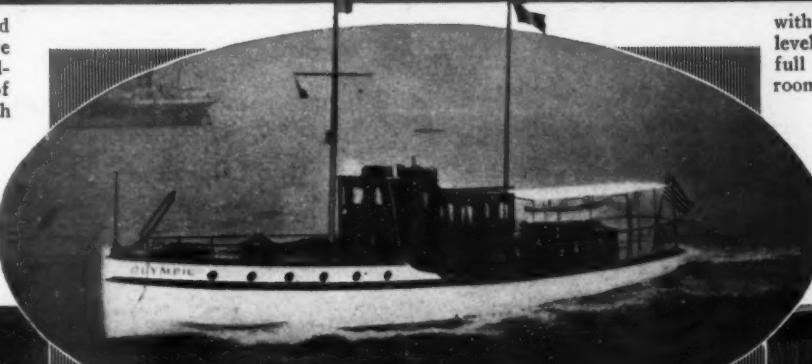
The boat has a raised deck forward extending aft to the pilot house and from the break aft to the stern there is a flush deck with passageway each side of the house. Just aft of the break is the pilot house.



which gives the boat a speed of 11 miles. Fuel tanks have a capacity of 560 gallons, allowing a cruising radius of over 1000 miles. The fresh water tanks hold 450 gallons and are installed with a pressure system giving running water both hot and cold in the staterooms, galley and toilet rooms. The yacht is heated with a

with the floor of same at the level of the forward deck, giving full headroom in the engine room below which is well lighted through portlights in the trunk. Aft of the pilot house is the deck saloon, and the main deck is here carried across the boat.

Broadside view of Olympic, showing her pilot house and cabin.



Interior view of the deck cabin showing large sleeping accommodations.

A Commodious 43-Ft. Houseboat

to sleep two persons on a pipe berth and extension seat and is fitted with an extra large ice chest, having a capacity of 300 pounds.

THE boat is powered with a 24 h.p. 4-cylinder, 4-cycle Standard motor, with controls to the deck, so as to make her easily handled by one man.

The boat has the appearance of a 60-footer, the upper deck being covered with an awning for its full length, and

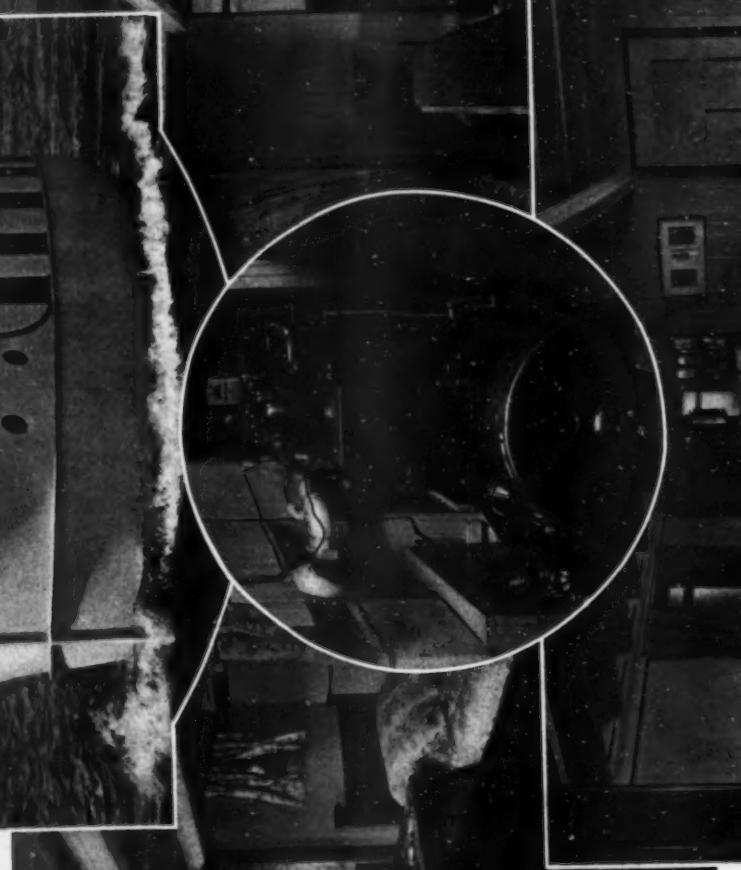
THE illustrations on this page show Alice, a 43-foot motor houseboat, recently completed for Mr. John J. Smith, of New York, by the Mathis Yacht Building Co., of Camden, N. J. This craft has a beam of 12 feet 10 inches and a draft of only 2 feet 10 inches, which will thus enable her to do extensive cruising in Southern waters,



One corner of the main saloon, showing companion-way to main deck.

the lower after deck left without an awning so as to be used for fishing and gunning. It is a very economical boat to run and has proven very seaworthy, and will give a speed of 9 to 9½ miles per hour.

A boat of this type is excellent for all-year-round cruising, and especially for that kind of cruise which embraces from first to last the wide range of temperature between North and South in late fall. Comfort in the cooler parallels of latitude is obtained from radiators in the owner's quarters, while as the houseboat goes South, the ample window space in the engine-room, ~~and~~ South, the ample window space in the engine-room, ~~and~~ below the floors is properly ventilated to preserve the boat and prevent rot. The galley is located in one



The large stateroom with two three-quarter beds and bureau between.

where the draft must necessarily be very limited. The interior of this boat is so arranged as to provide very large accommodations for the given length. They include a large stateroom, having two three-quarter beds, a large saloon, fitted with seats with holstered backs, so arranged that they will swing up to make upper berths. This permits four persons to sleep in this room comfortably. The construction of the hull is most substantial throughout, and every space back of the lining and below the floors is properly ventilated to preserve the boat and prevent rot. The galley is located in one



An 18-Foot High Speed Tender.



THE illustrations shown herewith are of an 18 ft. yacht tender recently furnished to Mr. Wm. Derby, Jr., for use on his Weckler built 75-ft. cruiser, Hyac. This little boat is equipped with a Sterling Kid 4-cylinder, $2\frac{3}{4} \times 4\frac{1}{2}$ " motor and is said to develop the unexpected speed of $16\frac{1}{4}$ miles per hour, the engine operating at about 1200 r.p.m. Due to the long engine beds in

Two views of Hyac, a 16-mile yacht tender, built by the Weckler Boat Company.

the boat there is no perceptible vibration at this high speed and owing to the full bow lines which lift the boat, very rough water for so small a craft can be negotiated with perfect safety.

Construction is of the best throughout, and all fastenings are copper.

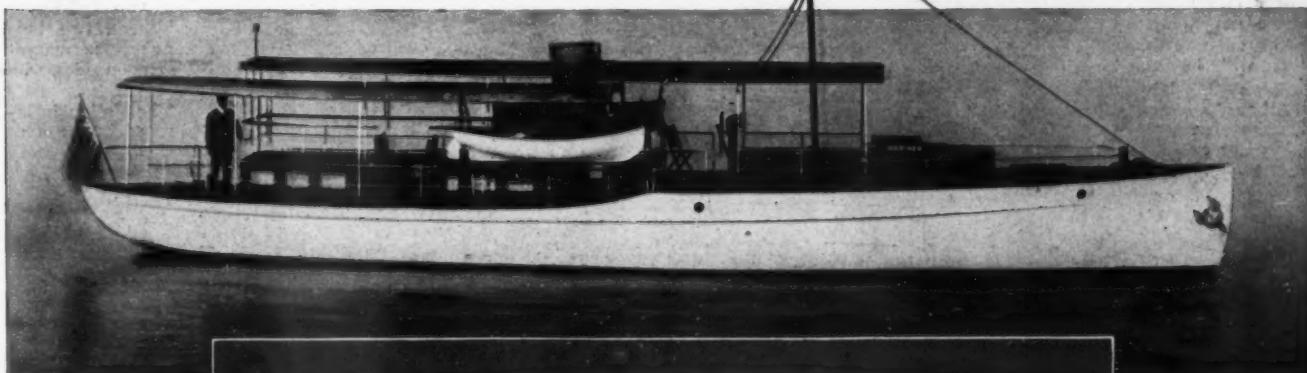
A 65-Foot Western Cruiser.

MARINER is a 65' by 12'8" cruiser built for a member of the firm, by the Defoe Boat & Motor Works, of Bay City, Mich. She is one of the finest equipped

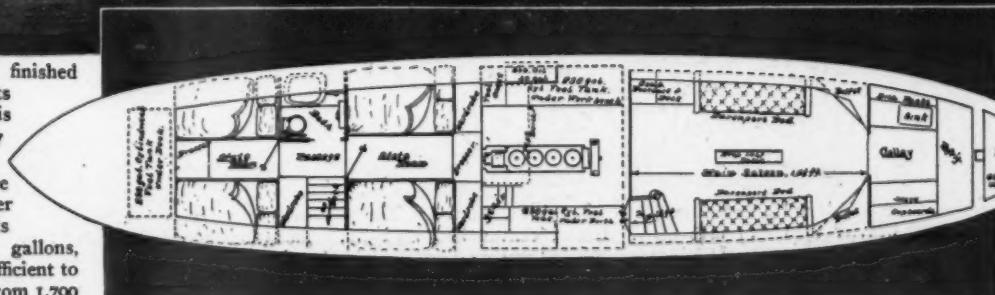
tion is remarkable. With her 50 h.p., two and one half ton Stork motor, she has a maximum cruising speed of 12.3 miles per hour on less than

6 gallons of gasoline, and, for ordinary purposes, a speed of $10\frac{1}{4}$ miles on only 4 gallons.

In general appearance Mariner is long and low. Her floors are placed as low



and best finished motor yachts afloat, and is distinctively an open-sea long distance cruiser. Her fuel tanks hold 690 gallons, which is sufficient to drive her from 1,700 to 1,800 miles. Her low cost of opera-



Mariner, an open-sea, long-distance cruiser, built by the Defoe Boat & Motor Works.

as possible, and that permits bringing down the cabin roofs so that they offer little resistance to wind and sea in bad weather, and in good weather are used by passengers as the decks of a

steamer, an awning covering them the whole length. All outside woodwork is of mahogany except the decks, which, inside the weather boards, are laid of cypress, caulked, marine-glued and waterproof-varnished. The railing and awning stanchions are of galvanized iron.

The general interior arrangement is shown in the accompanying drawing. The midship stateroom, bathroom, galley and engine-room are finished in white enamel and mahogany.

There are sleeping accommodations for 12 in the two staterooms and the folding davenports in the main cabin, and for two more, when necessary, in the engine-room. The galley has a three-burner, kerosene generator stove, and an ice chest that keeps ice for five days in the hottest weather. Both galley and bathroom are piped with fresh hot water, as well as cold, the hot water tank being located in the stack on top of cabin so that it gives good pressure

at the faucet. Both cabin and signal lamps are lighted from the boat's own electric plant in the engine-room, which consists of a dynamo attached to main motor, and a storage battery.

The 50 h.p. motor is a Stork, four-cylinder heavy duty, turning at 425 to drive the boat her maximum of 12.3 miles, and at 325 to drive her at the moderate cruising speed of 10½ miles. The controls are all brought on deck.

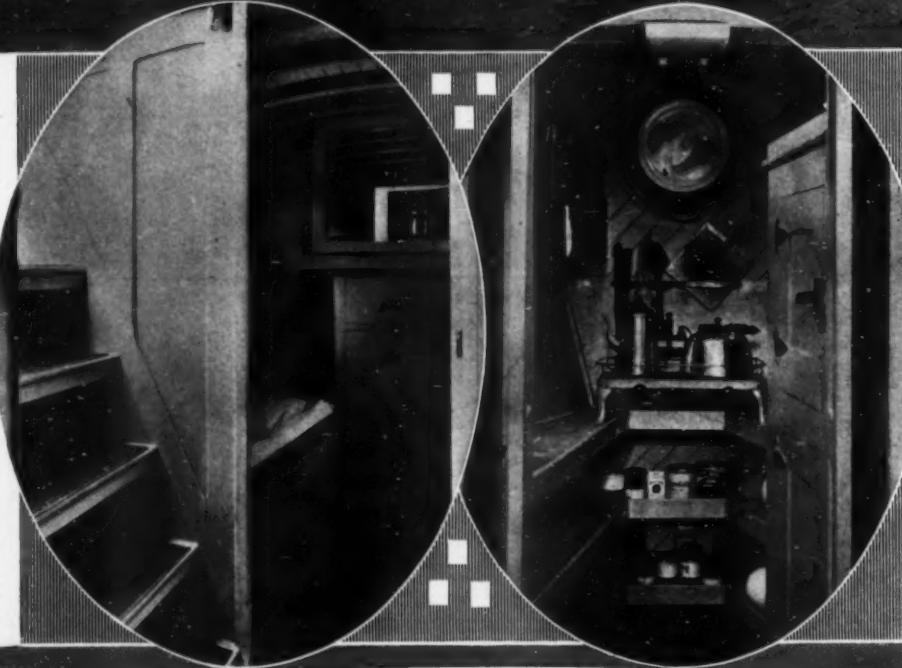
A Bridge Deck 45 Footer for The Great Lakes

THE photographs illustrate the cruiser Tobermory, owned by Commodore F. W. Wakefield, of Vermilion, Ohio, built by the Matthews Boat Co., of Port Clinton, O., and powered with 30 h.p. Ralaco.

The general dimensions of the boat are: length overall, 45 ft.; beam, 11 ft. 3 in.; draft, 3 ft. 4 in.

The general construction throughout is very heavy, as the boat is intended for rough weather. It will be noted

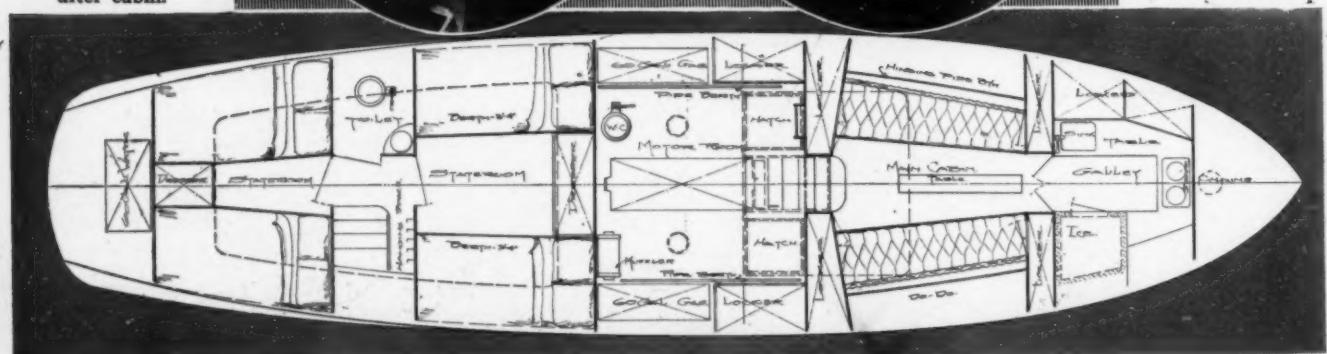
Starboard companionway leading to after cabin.



with mahogany trim.

The lay-out is particularly attractive on account of the large amount of accommodations on this size of boat. Beginning at the bow, we provide for galley forward, having ice-box filling from deck, dish-racks, lockers, sink, stove, etc. The main cabin follows with two full-length lockers, two buffets, permanent seats on sides, with

The galley is located in the eyes of the ship.



that Tobermory has exceptional freeboard, and the scantlings are a great deal heavier than what are ordinarily considered sufficient for this size of boat.

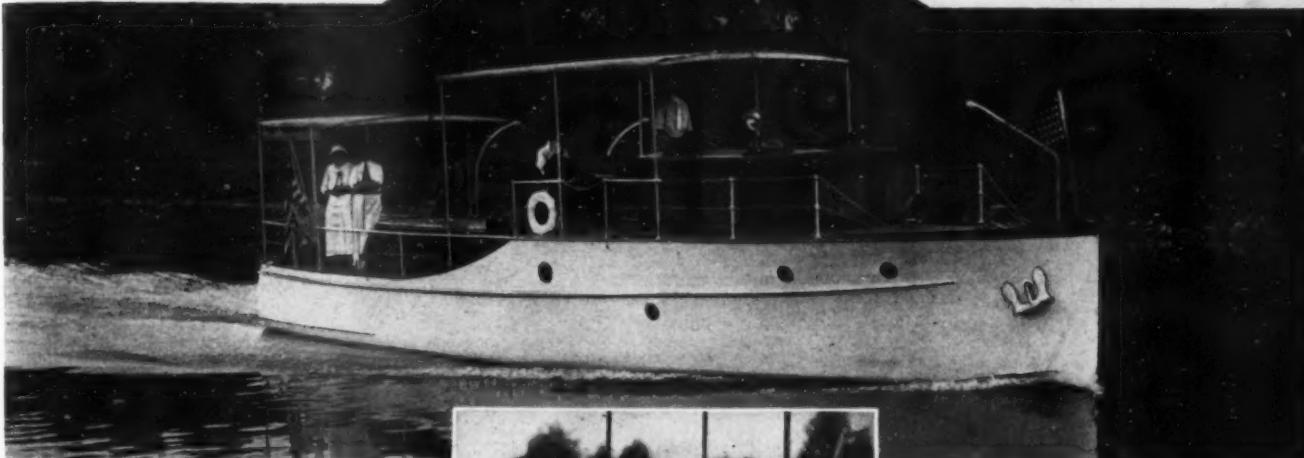
The planking is of long-leaf yellow pine below water line; white Virginia cedar above

waterline. The exterior of all houses is finished in mahogany. Decks, canvas laid forward; yacht-laid aft. All houses are ventilated by means of ports. In the forward trunk house are six plate-glass windows which provide light. The interior finish is in cream enamel

upholstered pipe berths over, making accommodations here for sleeping four. The motor-room is installed amidships, with all controls brought alongside of steering-wheel on the bridge deck. Aft of the motor-room are two staterooms with toilet and vestibule between.

A 46-Footer with a Pilot House.

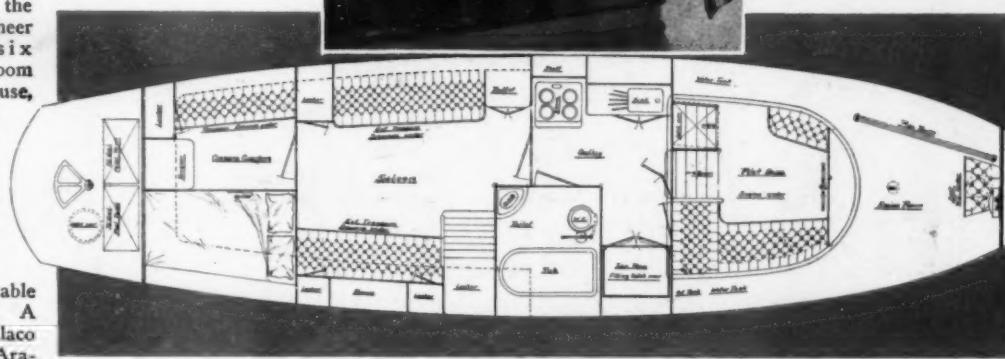
ARAGON, built by the Niagara Motor Boat Co., of North Tonawanda, N. Y., for Dr. A. B. Bennett, of Washington, D. C., is one of the most up to



date and seaworthy cruisers built in 1914. She was designed to go "anywhere" and her record so far shows that she has fully come up to these requirements.

The overall length of this craft is 46 feet and with her beam of 11 feet, ample accommodations are possible for the owner's every need. The outboard profile is quite out of the ordinary, but it has been worked out by the designers with a very pleasing and attractive result.

A pilot house is located ten feet from the bow, raised three feet above the raised-deck sheer line. With six feet headroom in the pilot house, the floor is still high enough to permit the engine to be installed beneath it and form a good sized, workable engine-room. A 30 h. p. Ralaco motor gives Aragon a speed of 10



Aragon, built by the Niagara Motor Boat Company, for Dr. Bennett, of Washington, D. C.

m.p.h. A bridge is located aft of the pilot house for use in steering in good weather with an auxiliary wheel in the pilot house for bad weather. The pilot house also

provides a comfortable place for the owner's guests to sit when under way in bad weather.

The galley is located directly aft of the engine-room and is of generous proportions. A real stove, together with a large ice box which is filled from the top and the usual galley fittings makes the equipment very complete.

The main saloon is ten feet long and extends the full width of the boat. Two extension transom berths are provided with drawers under them and an exceptionally large amount of locker space.

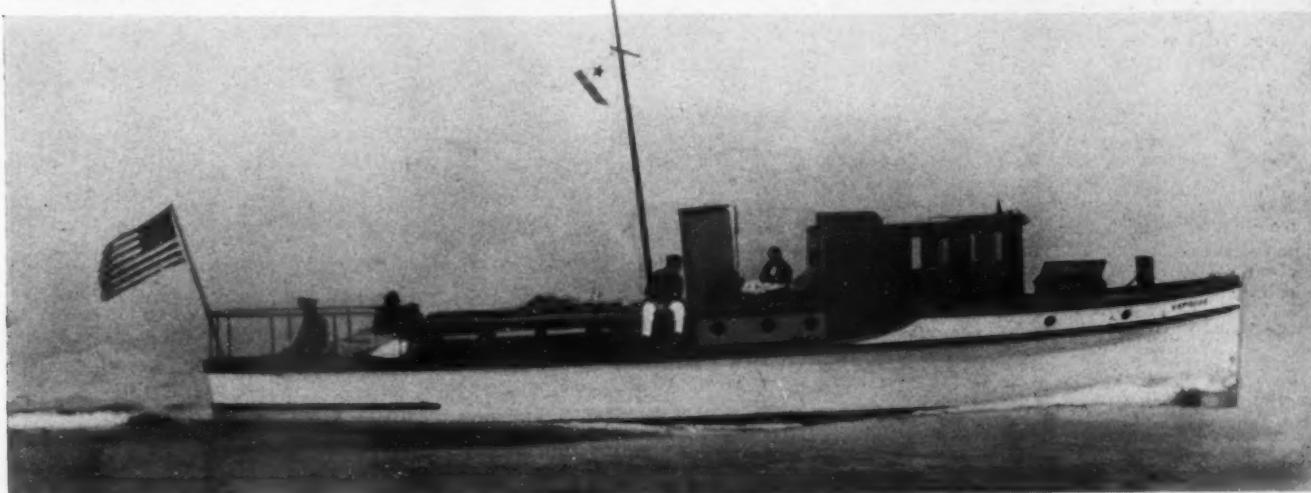
The owner's stateroom is in the after part of the boat and like the other arrangements in Aragon, is well suited for every requirement. A double berth and a transom berth in owner's stateroom are provided.

A Pacific Coast Long Distance Racer.

ONE of the successful long distance racers on the Pacific this past summer has been Vamoose, a cruiser built by H. B. Pickering & Co., of Seattle. In heavy weather,

mostly through a fifty-mile gale, this boat won first place in the Brentwood International race and second place in the Seattle-Vancouver race. She is

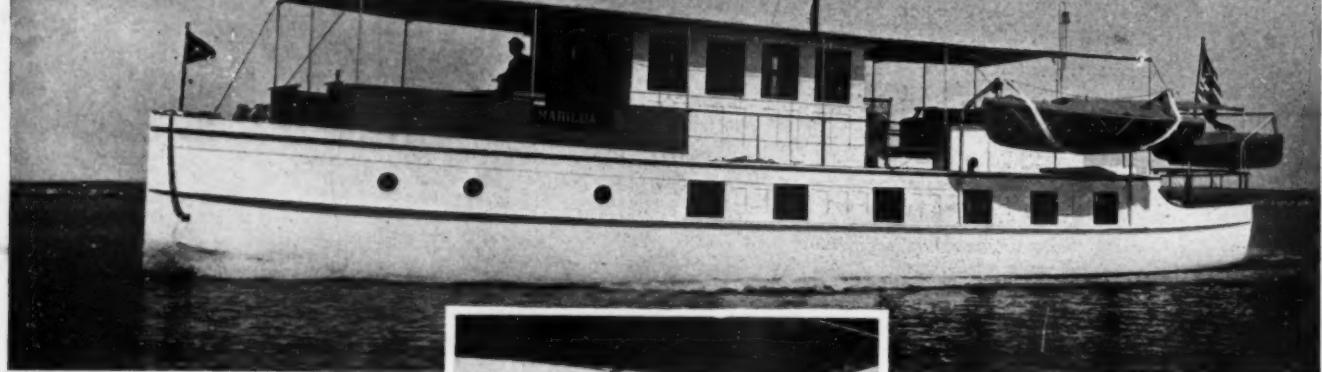
powered with a 37 h.p. motor, which gives her an ordinary cruising speed of ten miles per hour, with an extreme speed in excess of this when such is deemed necessary.



Vamoose, built by H. B. Pickering & Company, which won several prizes on the Pacific this summer.

MARILDA

Deck Cabin Cruiser



MARILDA is a 65-foot by 16-foot motor boat built by the Greenport Basin and Construction Co., of Greenport, N. Y., for Mr. Frank A. Davis. She has a draft of only 2 feet 10 inches, but is a very easy boat in a seaway and fast for her displacement.

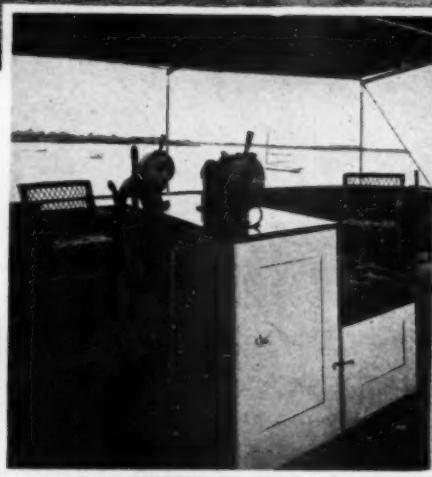
She is very strongly built, with oak and yellow pine scantlings, yellow pine planking, can-

vas covered cypress main deck and Oregon pine sunken quarter deck.

The power plant consists of two $5\frac{1}{2}'' \times 6''$, four-cylinder, four-cycle Sterling motors, also a General Electric 1 K.W. set with switchboard, Iron-clad oxide batteries with Tri-mount electrically driven bilge and fire pump.

(Continued on page 84)

Engine-room.



Looking aft in the large deck house.



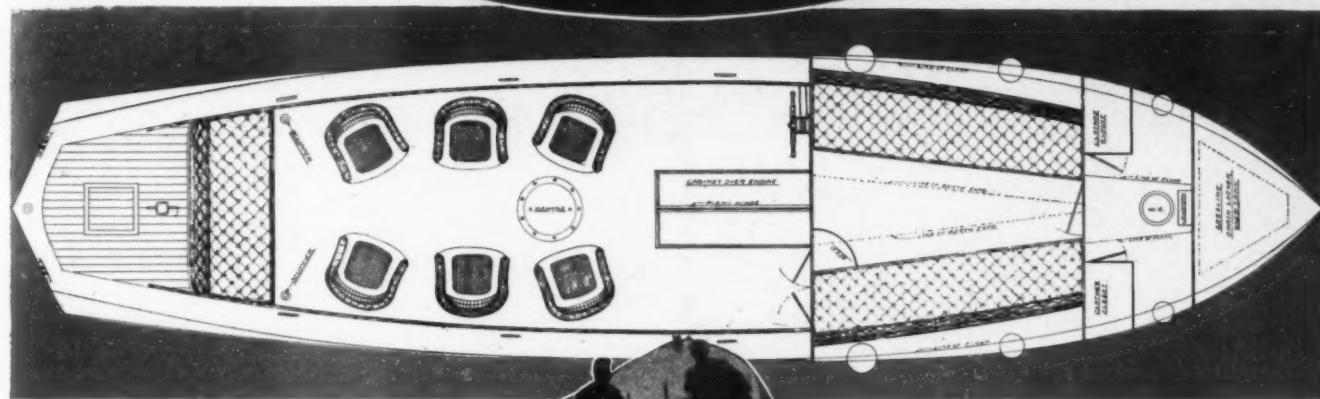
A Thirty-Foot Cruiser for Mexico.

THE Camden Anchor-Rockland Machine Company, of Camden, Maine, recently completed the 30-foot cruiser shown below for Mr. W. T. Warden, of New York City, and this boat is to be used at Tampico, Mexico. The boat has a beam of 7 feet, a draft of 2 feet, the freeboard at the bow being 4 feet 3 inches, and at the stern 2 feet 4 inches.



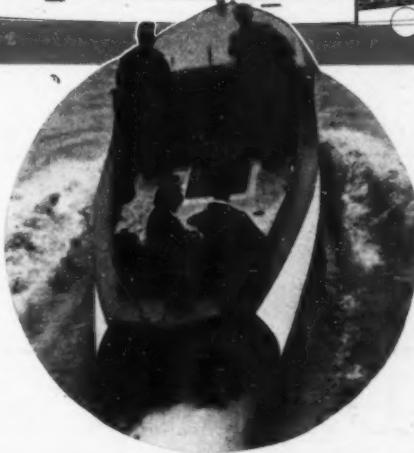
cushions and wicker chairs manufactured by the Wicker-Kraft Company are also provided. The entire body of the boat below the water line is sheathed with yellow metal which is an absolute necessity for boats which are to be used continuously in southern waters.

The plant consists of a 20-35 h.p. 4-cylinder 4-cycle motor, which gives the boat a speed of 15



Native Maine oak is used for the frames, with a bilge keelson of yellow pine. The entire planking is of long length selected Maine cedar, with the exception of the topsides forward, which are of mahogany. Tongue and groove white pine is used for the cabin deck and white pine for the cockpit deck, the latter being self bailing. A mahogany cabinet is built over the motor and the rest of the cabin interior finish is also mahogany, with paneled mahogany bulkheads throughout.

Copper and bronze fastenings are used throughout and nothing but polished brass hardware. A fuel capacity of 50 gallons is provided in a copper tank and also a 30-gallon capacity for fresh water. Leather covered



Thirty by seven-foot cruiser, built by the Camden Anchor-Rockland Machine Co., to be used at Tampico, Mexico.

miles an hour. The electric lighting plant consists of a dynamo, storage battery, ten 6 c.p. lamps with automatic cut-out, and switchboard.

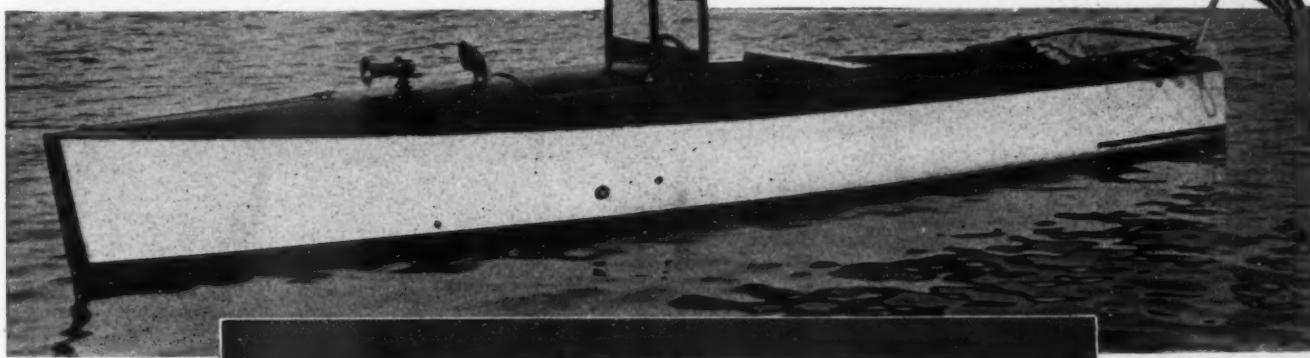
Although not so equipped at the time the photograph was taken, this boat was fitted with polished brass port lights, and a standard awning was provided for the cockpit before shipping. The cruiser is one of the company's standard models. The makers consider her, owing to the size and roominess of her cockpit, a particularly good boat for such work as taking out parties or using for light commercial purposes in semi-protected waters.

Twenty-Eight Foot Fast Runabout.

ONE of the most popular as well as the most attractive runabouts of the year is shown herewith: She was built by the Morristown Boat and Engine Works, of

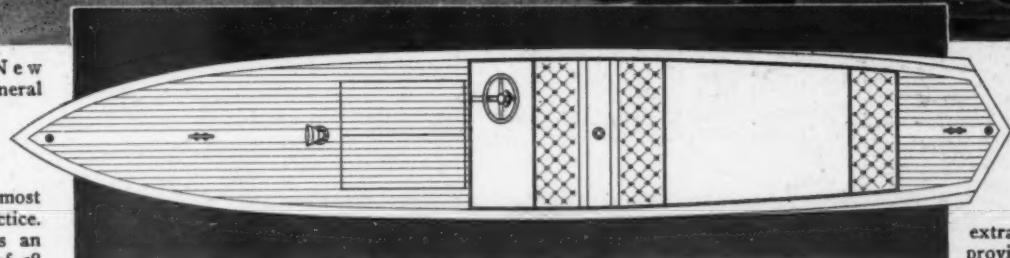
beam of 4 feet 9 inches, and a draft of 1 foot 10 inches. The freeboard at the bow is 2 feet 11 inches and at the stern, 1 foot 10 inches.

The motor is located forward under a large hatch, opening from the center. The helmsman's position is immediately aft of the en-



Morristown, New York. The general arrangement is well shown in the plan, it being in accordance with the most up to date practice.

The boat has an overall length of 28 feet, an extreme



Runabout built by the Morristown Boat and Motor Works.

gine bulkhead, with all controls brought out to the steering wheel, making the boat easily handled by one man. An extra large cockpit is provided with transom seats and chair space.

Motor Boats for the Panama Canal.

One of Three Substantially Constructed Boats, Built for Government Service.
Equipped With Two 50 H.P. Motors, Giving a Speed of 14 Miles an Hour.

PATROL, Search, and Pioneer are the names given to the three motor boats recently completed by the Welin Marine Equipment Company, of Long Island City, for use on the Panama Canal. These boats are very similar in appearance and follow the same general interior arrangement. They are 45 feet long, by 9 feet wide, and each is powered with two six-cylinder 45-75 h.p. Sterling motors, which give the boats a maximum speed of 15 miles an hour, and an ordinary cruising speed of 14 miles an hour.

The interior lay-out is planned according to the wishes of the canal people, and is that which is best adopted for the way in which these boats are to be used. On

of Dredges, accommodations for whom are arranged in the cockpit at the stern.

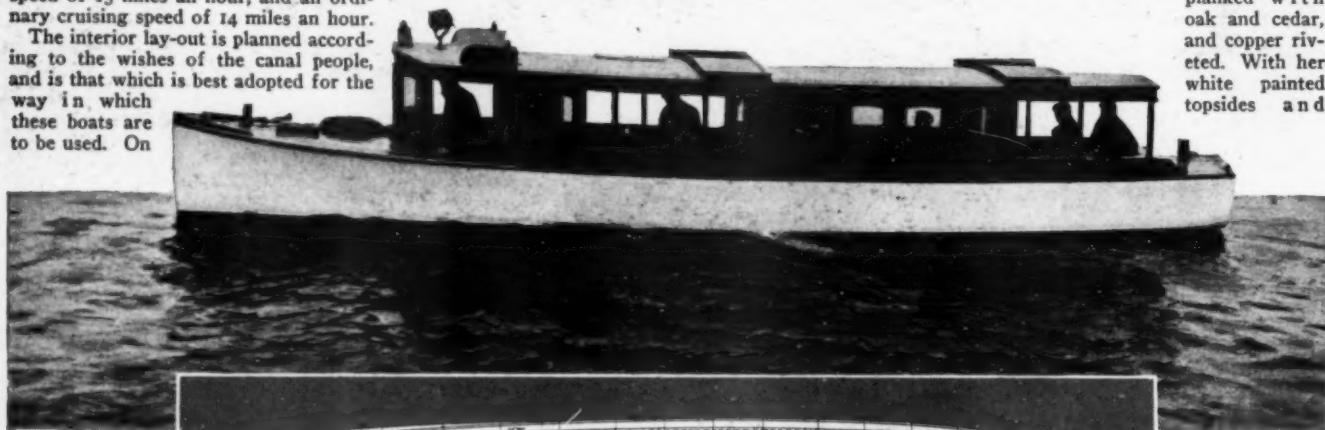
The pilot at night can reach up and with one hand operate the searchlight on the roof above his head, and he can either signal the engineer which motor to back or stop or go ahead, or he can, by means of levers on either side just below the steering wheel, operate the clutches himself in an emergency.

Separating the comfortable after cabin from

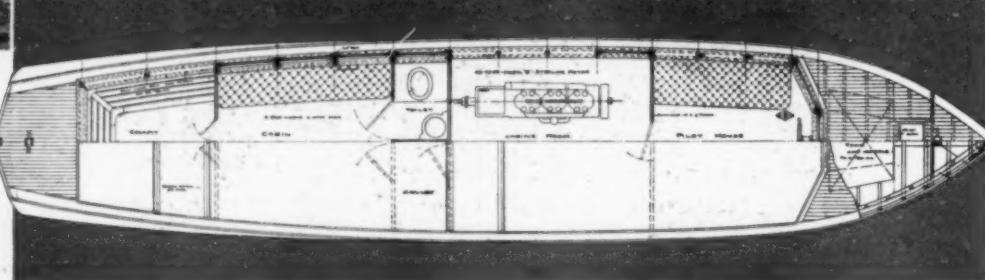
the engine-room is a space fitted with stove, icebox and sink, closet room, etc.

In noticing the enclosed cabin some may wonder why it is so built for a hot climate, but one experience with a tropical shower, it is said, will explain all, and as the rainy season is in evidence about two-thirds of the year, glass windows are a necessity to keep things dry inside a boat.

The boat is electrically lighted throughout, planked with oak and cedar, and copper riveted. With her white painted topsides and



the forward and after deck there is just room enough for a boatman, a pilot house being provided for the captain who receives his orders from the Superintendent



Plan and profile of one of the Welin-built boats to be used for canal service.

varnished decks and cabin house, she will make visiting yachtsmen think that they are back in the states where such fast boats are more common than the Equator.

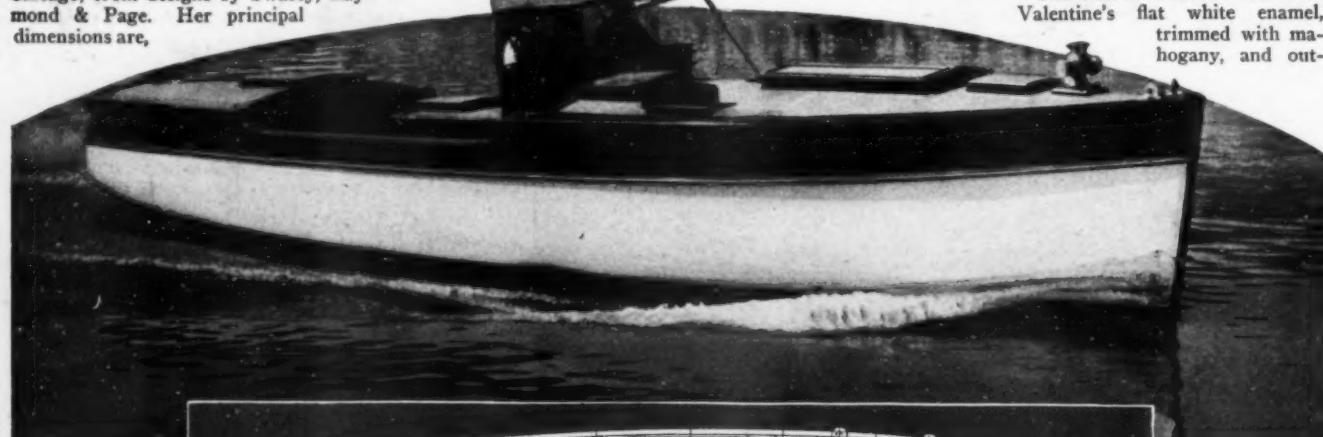
Forty-Foot Double Cabin Cruiser.

THE boat shown below is owned by Mr. W. T. Warren, being recently completed for him by the Warren Boat Company, Chicago, from designs by Swasey, Raymond & Page. Her principal dimensions are,

ings are of bronze, giving a rust-proof job. This boat is powered with a Model 14, 36 h.p.

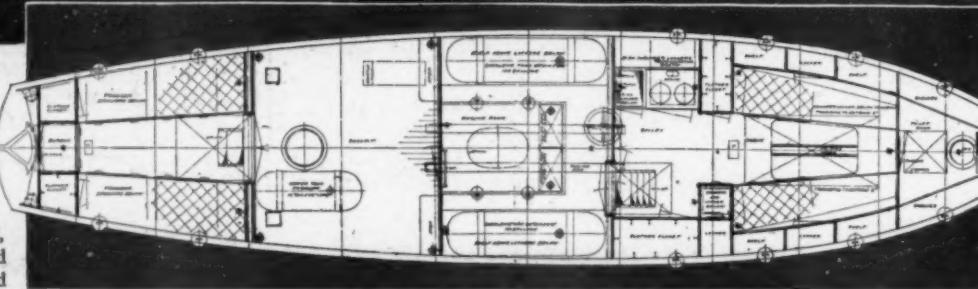
6-cylinder Loew-Victor motor, with Leece-Neville starting and lighting system, with Willard storage batteries.

The boat is finished inside with Valentine's flat white enamel, trimmed with mahogany, and out-



length overall, 40 feet, beam, 9 feet, and draft, 2 feet 6 in.

The hull is planked with $1\frac{1}{4}$ " material, copper riveted over washers and all other fasten-



Plan and profile of Mr. Warren's cruiser.

side is finished white, with Valspar enamel.

There is a solid bronze cut-water, extending below the water-line, and a speed of 10 miles an hour is obtained.

A Semi-Houseboat Cruiser.

A Fifty-five-Footer with Large Accommodations and Moderate Draft for Southern Waters. Plain in Finish, but Serviceable, and Having a Speed of Over Ten Miles per Hour.



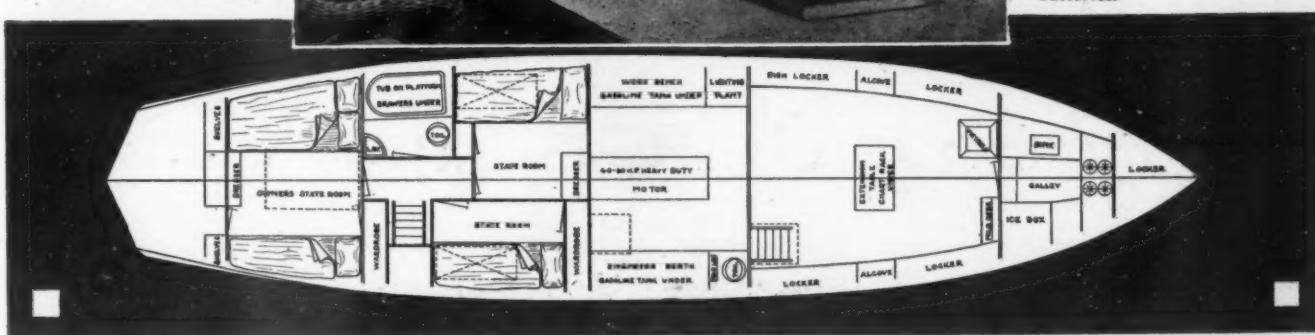
AN excellent type of cruiser has recently been completed by G. R. Richardson of North Tonawanda, N. Y., from his own designs.

The principal dimensions of this boat are, 55 feet overall, 12 feet 6 inches beam and 3 feet 6 inches draught. She is on the semi-houseboat idea, being large and having full cabins and all decks being flat enough to walk on. The arrangement and model are the owner's ideas to the greatest extent and worked out by the builders. There is nothing



at all radical about the hull, it being a wholesome design with draught kept as low as was considered consistent for a good all-around boat, as the owner planned it with a trip to Florida in mind. She is owned by Mr. W. F. Barry, of Medina, N. Y.

The motor is a 4-cylinder heavy-duty 7-inch x 9-inch 40 h.p. Buffalo from which a speed of about 10½ miles per hour is obtained. There is an independent motor to run the generator. There are also an air pump and a bilge pump. The storage batteries are the new Edison non-destructible batteries.



Arrangement plan of the 55-footer designed after the ideas of the owner and built by G. R. Richardson.

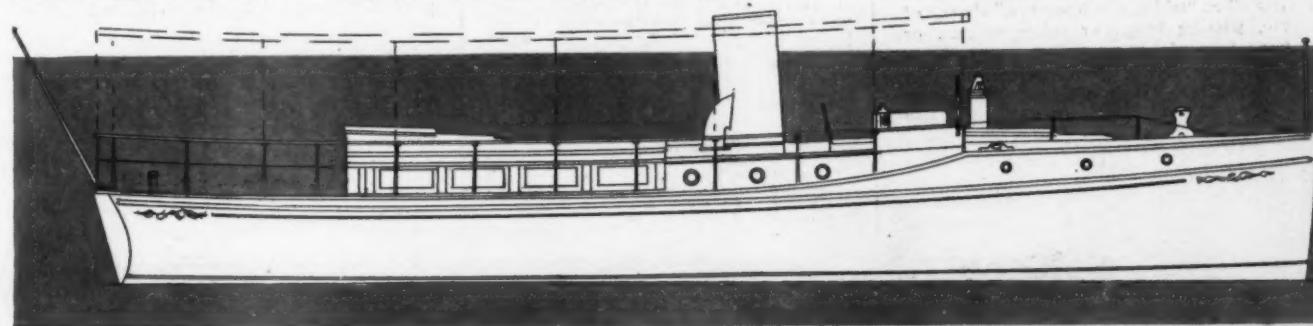
A 47-Foot Canadian Cruiser.

A Twin-Screw Boat Heavily Built for Service on the Great Lakes.
A Type with Raised Fore Deck Bridge and After Cockpit.

ONE of the finest boats on the Great Lakes this season was built by Robertson Bros., of Hamilton, Ontario, for Mr. William Dillon, of that city, from designs by

Bowes and Mower of Philadelphia. She is powered with two 18 h.p. Buffalo motors which is a considerable departure from ordinary practice with a boat of this size.

The principal dimensions of this boat are overall length, 46 feet 7 inches, waterline length 45 feet 1 inch, extreme beam 11 feet, and draft 3 feet 3 inches.



Raised-deck cruiser with bridge forward, built by Robertson Bros.

PRIZE CONTEST In Questions And Answers

Keeping a Motor Boat's Log.

Several Ideas as to the Best Method of Keeping A Full, Accurate Record of One's Experiences.
Several Suggested Forms to Keep the Data in, and the Important Facts to be Noted.

THE PRIZE CONTEST—Answers to the First Question in the October Issue.

Very Thorough.

(The Prize-Winning Answer.)

THE form of log-book to be used depends upon the waters in which the cruising is done. For small boats in shallow bays or other inland waters where a taffrail log would not be practical, a form similar to that shown in Fig. 1 is desirable. An ordinary substantially bound record book may be used, the columns ruled and headed as shown.

It is necessary that the speed of the boat should be tested with the engine running at various revolutions per minute over a course whose length is known, through waters having no current, the results tabulated and a diagram drawn on cross-section paper. On the slant lines representing the speed, write the revolutions that produce it. To obtain the distance through the water, follow a horizontal line representing the interval of time, until it intersects the slant line corresponding to the r.p.m.; from this point follow down a vertical line to the bottom of the diagram where the distance in nautical miles is read.

Referring to Fig. 1, write at the top of the page, the port left, the port bound for, and the date. On the left-hand page in the column headed "time" write the hour and minute of the day when "taking the departure," change of course, passing buoys or other objects, or change of speed.

Subtract the time between entries in the first column and write their difference under "Interval of time" on a line opposite the later time in column one. In the third note the revolu-

Questions for the February Issue.

1. Suggest means to protect one's boat and its equipment from the depredations of harbor and river thieves.

Suggested by D. G. S., Norfolk, Va.

2. What methods can you recommend for stowing and using charts on some particular type of boat, (open or cabin), illustrating same if necessary.

Suggested by V. C. P., New York City.

3. Describe and illustrate the construction of a simple, easily opened, water-tight flush hatch in a watertight, self-bailing cockpit.

Suggested by C. H. C., Saginaw, Mich.

RULES FOR THE CONTEST

Answers to these questions, addressed to the Editor of *MoToR BoatinG*, 119 West 40th St., New York, must be (a) in our hands on or before December 26, (b) about 500 words long, (c) written on one side of the paper only, (d) accompanied by the senders' names and addresses. (The name will be withheld and initials or a pseudonym used if this is desired.) Questions for the next contest should reach us on or before the 26th of December.

The prizes are: For each of the best answers to the questions above, any article advertised in the *current issue* of *MoToR BoatinG* of which the advertised price does not exceed \$25, or a credit of \$25 on any article advertised in the *current issue* of *MoToR BoatinG* which sells for more than that amount. (There are three prizes—one for each question—and a contestant need send in an answer to but one if he does not care to answer all three.)

For each of the questions selected for use in the next contest, any article advertised in this issue of *MoToR BoatinG*, of which the advertised price does not exceed \$5, or a credit of \$5 on any article advertised in this issue of *MoToR BoatinG* which sells for more than that amount.

tions per minute of the engine. Enter the distance as taken from the diagram in the fourth. Apply any correction for current and enter the distance made good over the bottom in the fifth column. The course steered by compass is placed in the sixth. The amount of deviation in the seventh, and the corrected course in the eighth.

On the right-hand page write the remarks which should embody the following information: Opposite the time, describe the buoys, points of land or other objects passed. Either estimate the distance off, in passing points of land or other prominent objects ashore, or the various problems of "Distance off" may be worked if one possesses an azimuth instrument. At change of course it is well to take a bearing to lighthouses in view, and to take soundings and record them opposite the time, noting the condition of the tide. When the course ranges with any prominent objects make note of this.

When running on rivers take the time when passing under bridges and estimate the clear height; if it is supported on piers, state through which opening you passed, also on canals make notes about the locks.

Keep careful notes on the amount of gasoline, lubricating oil and water received, expended and on hand, where obtained and its accessibility.

The barometer and thermometer, if one possesses them, should be read systematically every hour or two and noted in the remarks, or two columns may be allotted for these if desired.

Observe the direction and force of the wind, and, after correcting by a diagram or tables, record true direction and force by Beaufort's Scale. The state of the weather, the form of

When you send in your answers you must state what you will take for a prize, should you win one.

clouds, amount of overcast sky by scale of 0 to 10, and the state of the sea, may be recorded by abbreviations or symbols.

In general, make notes that will assist one when retracing or going over the same route again. Strictly personal experiences and impressions should not be written in the log-book, but in the operator's diary.

In conclusion, the form of log-book and the entries mentioned in the foregoing have been used with great satisfaction by the writer on boats as small as 22 feet in length.

For off-shore cruising in the larger types of motor boat a knowledge of navigation is essential and the form of log-book necessarily is different than the one previously described. The form shown in Fig 2 is similar in many respects to those in common use by the merchant marine and U. S. Navy, except that it has been altered for the use of the navigator of a motor boat, and in other respects elaborated to embody more information.

On the left-hand page in the first column the usual even hours have been omitted so that exact time may be entered instead if desired. The number of lines allow the even hour to be recorded and an extra line for the fraction of an hour for the purpose of recording the time of change of course, reading of patent log and revolutions per minute. Record the data on meteorology every even hour. At change of course, and in each watch, weather permitting, take an azimuth and check the deviation and record opposite the time.

The right-hand page is for remarks, as the usual log-book has a space entirely too small to keep a complete record.

In passing any wreckage or derelicts make note of same, determine the latitude and longitude, and at the next port mail to a branch hydrographic office this information. This office will supply blanks and envelopes for the purpose, and in return will give you free, valuable information, which every navigator before leaving on a cruise should procure.

At the bottom of the pages are spaces to record other data, the nature of which is evident from the headings.

In the front of the book enter the name of the vessel, the names and addresses of the officers and crew, and the guests or passengers.

In case of accident a complete and well-written log-book is a very valuable asset.

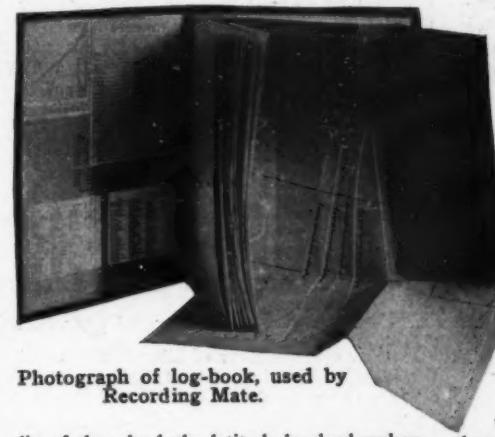
A "rough-log" is used by the officer in charge of the bridge, to record all data and occurrences, and another book called the "work book" for all sights and computations; from these the captain writes the "smooth-log" previously described. Employ another book which may be kept in memorandum form when in pilot waters to record all data relative to the piloting of the vessel.

C. GLENN LYMAN,
Babylon, L. I., N. Y.

The Printed Log-book.

On a motor boat the log-book should, in the writer's experience, include the features of the professional log-book, a diary of events, and a guests' book, meaning by the latter, one in which the guests may write out their experiences and pleasures of the trip and append their autographs. There is no question but that this plan makes the record of the boat's journeys fertile in memorabilia, which are at all times pleasant to glance through and to keep in the library through the winter as a stimulus for "swapping stories" with other captains. There are several forms of standard log-book pub-

lished. Generally, the left-hand sheet is ruled into columns for the formal record of the journey, whose title stands at the top of both pages as the points from and toward which the boat has traveled. The first column gives the hours of the morning and the afternoon and at noon spaces for recording the distance by log and by observation, the revolutions and



Photograph of log-book, used by Recording Mate.

slip of the wheel, the latitude by dead reckoning and by observation, and the longitude by observation. Unless the boat is a large one with a professional crew, or unless the owner has navigating instruments and either skill or hobby for making the observations, these particular data are very rarely recorded. Quite otherwise, however, with the data called for by the columns opposite the various hours of the morning and the night, in which from left to right are noted, each in its own column, the knots and fractions (or miles), courses, winds, currents, thermometer, barometer, deviation of the compass and leeway (in sailing vessels only). It requires very few moments to keep this record; if not every hour, at least every few hours of the day. At the bottom of the page are the blanks for recording the names of those on the lookout. On the right-hand page are the remarks and similar data. The sheets of a convenient size of such log are 8 1/4" x 5 1/4", and the book may be had of any

be sufficient for any day's run, and in that there is no space for such things as photographs, racing rules, lists of contestants and their ratings, and the like. The writer, therefore, decided to get a loose-leaf book with cloth covers and pages, measuring about 8" x 10", so that not only could one sheet be devoted to the formal nautical records, but also could any number of sheets be used for interesting material concerning the same journey or event. This book is shown, and serves the writer in the following way: On the inside of the first cover are pasted the tidal curves from New York to Albany as to difference in time, and as to amount of rise and fall, the table of distances from New York to Albany from point to point, and the courses over the same route. On the inside of the back cover for the guidance of the recording mate on the boat, is a list of the titles of the columns given in the formal log. Thus a certain amount of law and order are necessarily provided in the writing of the observation. In the body of the book several pages are devoted to the discussion of courses, danger points and other signals and signs, for points in and about New York Harbor so that in this sense the book is also a course book. Various tables of tide and current observation furnished by the government on application, are also part of this book, and very readily so because most of them are issued on 8" x 10" letterheads which require only to be punched at the appropriate points and then installed in the book where they belong with other similar data. The following plan is adopted in regard to the complete record of races. The program of the day, including the names, classes, measurements and handicaps of the boats entered is followed by the rules of the race. Next are inserted the government data as to currents, which is frequently followed by a quadrille-ruled sheet on which are plotted the times of high, low and slack water, and the direction and strength of the tidal wave and currents. Last comes the point at which the boat should be, by computation from one end of the run to the other, to which is added the actual time observed so that thus one may see how far behind or ahead of the schedule the craft is. This plan makes a very convenient and accurate time sheet. Next follow the courses and navigation point of the race, and then the actual record of events noted from hour to hour. When the race is over the report of the committee, newspaper clippings, and sometimes photographs complete the story.

RECORDING MATE,
NEW YORK CITY.

Make the Log Interesting.

EVERY vessel, whether she is operated for business purposes or solely for the pleasure of the owner and his guests, should be provided with a log-book. This book contains a brief history of the doings of the craft and her crew, and to the owner of a pleasure boat the joys of cruising are much enhanced by the possibility of living over again those glorious vacation days while snugly ensconced in a favorite arm chair before a crackling open fire, when the good ship herself is high and dry.

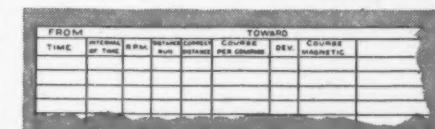


Fig. 1. Important points to be noted in the log of a small boat.

boat. The objections to this form of log for the amateur are, that it is not sufficiently elastic in that a single double page is assumed to



The motor boatman should elaborate on the terse entries made in the merchant service or his log-book won't prove very interesting reading. He should note the time of getting under way, weather conditions, makeup of the ship's company, the time lights and headlands are abeam, revolutions and other notes on engine behavior, names of vessels passed. When obtainable, any unusual or interesting happenings, personal or otherwise, points where gasoline was obtained, amount taken on and the price, time of dropping anchor, happenings while in port and adventures befalling members of the crew while ashore. These notes may be made in an ordinary note-book in lead pencil and need not be filled in while cruising. Enough should be written to prevent the log-keeper forgetting any important entries.

A substantial log-book should be provided, and each cruise should be written up at leisure in ink or typewriter from the notes mentioned above. Snapshots should be taken at every opportunity and prints of these should be mounted in the log-book as illustrations to the text. Pen-and-ink sketches are also a valuable addition if the log-keeper is blessed with artistic talent. It is surprising what an interesting volume may be built up in this way, and you may be sure that everyone interested in boats or boating will enjoy reading of your past cruises as recorded in the ship's log.

The book used should be about 8" x 10" in size with either "faint ruled" or plain pages

and well bound in leather. Two hundred pages thickness should be ample for all needs. If the log-book is to be typewritten a loose-leaf book should be chosen.

One of the crew should be chosen "Keeper of the Log" and he (or she) will find the duties of the office not the least agreeable part of life afloat. To be adapted to the work the log-keeper should be moderately good at descriptive writing, be something of an artist, have the instincts of the camera fiend and be possessed of a sense of humor. Last, but by no means least, should be counted the capability of taking pride in the undertaking. Such a log-keeper will produce a log-book which will be the pride of the ship and the joy of the captain's heart.

ALLAN O. GOULD, Portland, Me.

Constructing an Extension Transom.

Means Whereby the Sleeping Accommodations in a Small Cruiser Can Be Increased.
Several Designs Following Out the Ideas Gained from Actual Experience.

THE PRIZE CONTEST—Answers to the Second Question in the October Issue.

Strong Yet Not Unsightly.

(The Prize-Winning Answer.)

IN THE design of an extension transom, care should be taken to have it strong, yet not too heavy. It should operate easily,

keep their contents clear of bilge water should the boat be keeled sharply. Care should be taken not to make the drawers deeper than the width of the passage between the transoms.

Holes about $\frac{1}{2}$ inch in diameter should be drilled at various places to obtain ventilation; too much care cannot be taken to obtain a

free circulation of fresh air through the bilges and all enclosed spaces, a feature too often overlooked in small cruisers.

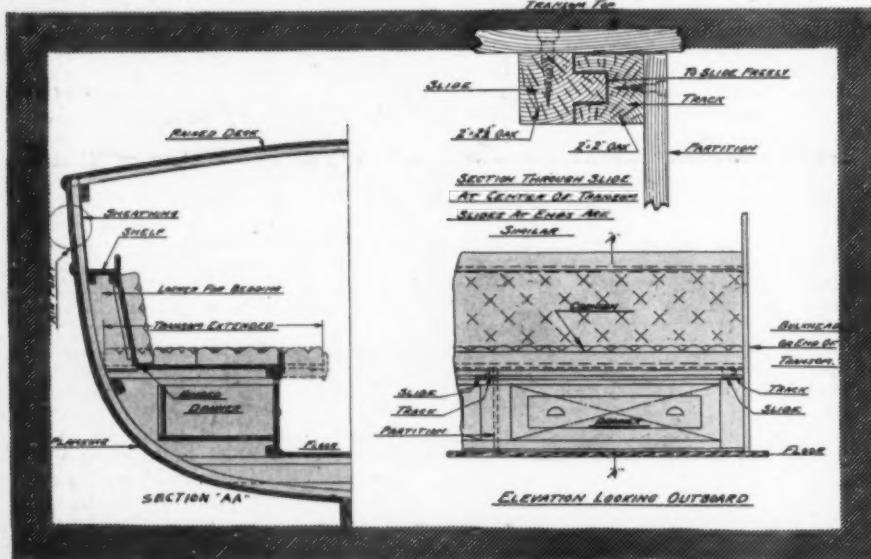
The dimensions will have to be worked out to suit the size and shape of boat, the top of the cushion should be $18\frac{1}{2}$ inches above the floor, but may be reduced if necessary to obtain sitting headroom.

A slide should be fitted at each end and one near the center, so the transom will slide easily and not bind or stick, as would be the case if but two slides were used. They can be made in a number of different ways, a dovetail having many advantages, but being difficult to fit. As easy as any is to cut a rectangular groove in the track or stationary piece, and fit the sliding piece to it. The groove should be perfectly straight and the two pieces should slide freely, yet not be loose or shaky—they should extend from the hull to the transom fronds.

The stationary pieces may be screwed to bulkheads or the transom ends, the center one being supported by a partition which helps to stiffen the structure. They should be perfectly parallel and the same height from the floor. The sliding pieces may be temporarily fastened in their places and the transom tops screwed to them.

A front board may be fitted high enough to keep the cushion in its place and deep enough to cover the ends of the slides.

The back board and shelf will have to be made to suit conditions, the width of the back



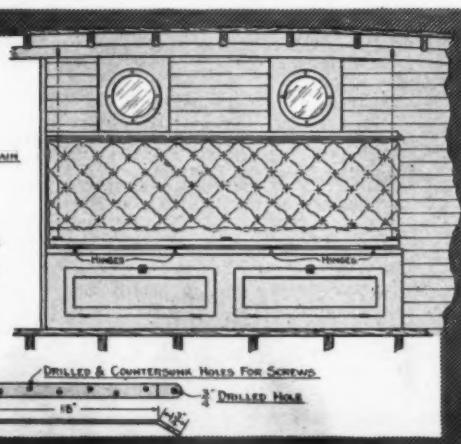
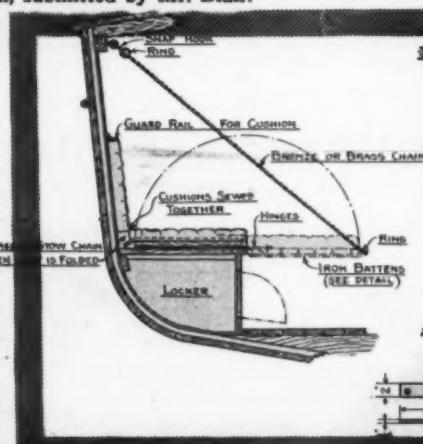
Design of a transom berth, submitted by Mr. Blair.

occupy the least possible space, and have no unsightly fittings to be broken and misplaced. The transom shown in the sketch is a type which has many advantages in its favor.

The lockers between the hull of the boat and the back cushions have ample space for the stowage of bedding out of sight, yet easily accessible, and room as well for racks and shelves for guns, charts (rolled) and miscellaneous articles.

The shelves over these lockers can be utilized in various ways, at one end near the stove lockers, and shelves may be fitted for dishes, groceries, etc., while near the engine boxes can be built for dry batteries, where they will be accessible, yet free from dampness and water.

Drawers should be fitted under the transoms in preference to lockers, so as to



Extension berth with large locker space beneath, designed by Mr. H. A. Motz.

board depending on the extension desired or the space available.

It should be possible to obtain an extension of 9 inches, and, as when extended, the cushions use the space previously occupied by the bedding which we will call 6 inches, we get a total extension of 15 inches.

This will give a good, wide, stiff transom, with lots of locker space, which is very important in a small cruiser; will be of good appearance, but with an overhang so short as to require no swinging legs or brackets to be broken off, and no hinges to be torn out.

C. L. BLAIR, Bath, Me.

Easy to Operate.

THE transom shown in the accompanying drawing is designed for ease of operation, requiring no shifting of cushions and having no sliding tenons to stick and bind in damp weather. In operation, the back swings forward on two rods or levers marked rods "D" in the drawing and rests on a supporting ledge fastened to, and projecting from the under side of the seat which is stationary. The seat is made in the usual fashion and has its entire inside space available for lockers with doors on the front opening outward, or, if preferred, leads may be put in the top under the cushions.

The back is made of the same thickness material as the seat (about $\frac{3}{8}$ -inch stuff) and should have about three battens (for a 6-foot transom) to prevent warping. A stiffener piece about $1' 4'' \times 2\frac{1}{2}$ " should be run along the lower edge to prevent bending under a weight when used as a bed. This stiffener piece also serves as a bumper when the back is returned upright. So much for the seat and backrest.

The metal parts are detailed individually in the drawing and consist of bent and drilled steel plates and flats, with the exception of the pivot plates "C" which can be ordinary malleable iron awning plates, galvanized, which are carried in stock in supply houses. The plates and other metal parts must be rigidly fastened to the woodwork, as shown on the drawing, and through bolts used whenever possible.

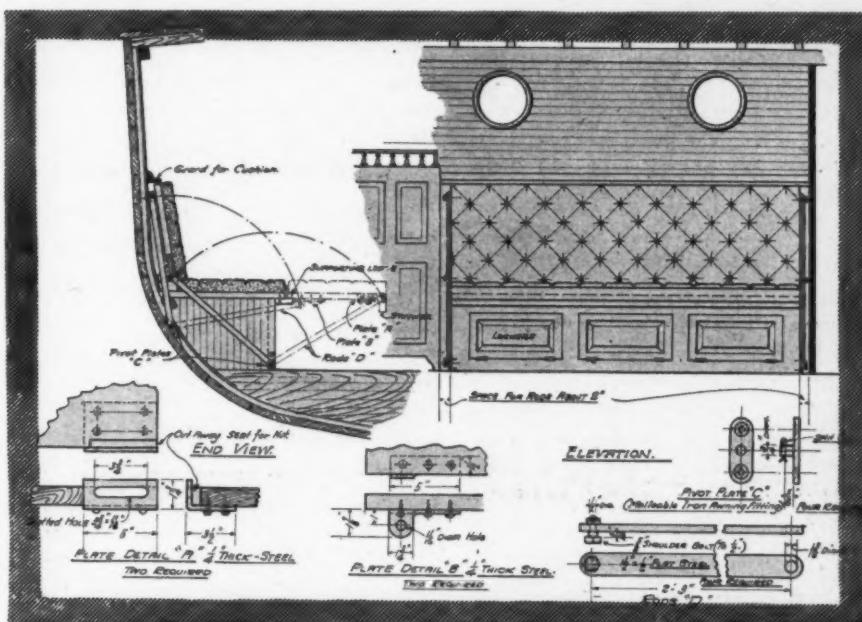
Taking Care of the Cushions.

A SIMPLE way to build an extension transom for a small boat is shown in these drawings. No dimensions are given, as, in various sized craft, they would be widely different.

When closed for the day, the cushions are

Extension Transom and Locker.

THE illustration shows an easily constructed transom, having a hinged extension, which folds back on the seat when not in use. The berth should be at least $6' 2''$ long and about $18''$ high when closed, allowing for the thickness of cushions and extension board. Measuring from the staving of the inside of the cabin, the seat proper should be about 21 inches wide and the extension board about 19 inches. Considering that the cushion



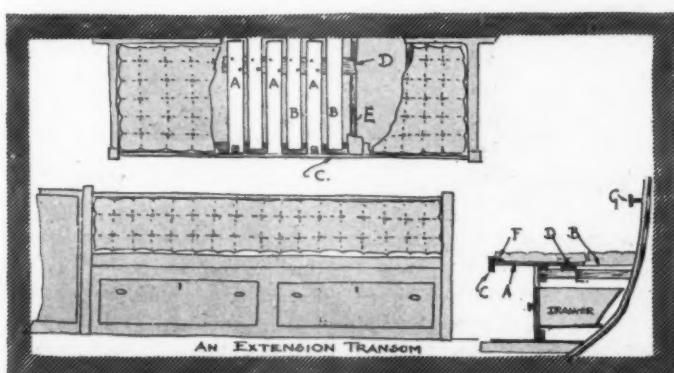
Excellent design suggested by Mr. W. E. Motz.

arranged as shown—one on the seat, and one for the back. When open, the back cushion drops to fill the enlarged space made by extending the top.

The lower portion of the transom is built in the usual way and fitted with drawers on slides. The top is planked cross-wise, so to speak alternate pieces being attached to the front rail "C" and the stringer "D." The intervening planks "B" are made secure to the transom top. All the pieces should be about $\frac{3}{8}'' \times 3''$, and have at least $\frac{1}{2}''$ space between them. The stringer "D" should be fastened to the pieces "A," "A," etc., with two screws in each. The rail "C" should be fastened with screws, and every fourth slat should have a small angle brace as shown at "F." A runner "E" must be placed under the top for "D," that carries the slats, to ride upon.

The back cushion is best held in place by a cleat, similar to "G," set at a proper height to hold its top edge, and the lower edge is held in place by the seat cushion.

WILLIAM ATKIN, Huntington, L. I.



Mr. Atkin's suggestion for an extension transom.

The use of through bolts to fasten pivot plates "C" in place will facilitate their installation and removal if necessary in cramped quarters, such as shown in the sketch.

The dimensions given are proper for a transom 18 inches high by 20 inches seat depth, including cushions, and a backrest 20 inches high. For other dimensions of seat and backrests, the lengths of rods "D" will have to be made to suit.

W. ELMER MOTZ, Philadelphia, Pa.

ions are 3 inches thick, make the seat cushion 19 inches wide and the back cushion 21 inches. This gives an 18-inch seat, and when extended with the cushions pulled forward makes a comfortable berth 40 inches wide. When having the cushions made, specify that the two are to be sewed together to act as a hinge, as shown in the drawing.

The extension, which is best made of oak, is fastened to the seat with four 3-inch hinges and stiffened with three iron battens, using $\frac{1}{4} \times 2$ -inch strip iron. The two on the end are made as shown in the detail drawing for fastening the chain, but the one in the middle need only be flat. One end of the chain is permanently fastened to the battens and the other end is fastened by means of a snap hook to a heavy eye, secured to the stringer which carries the deck beams. These chains conveniently stow away in the space shown in the drawing, when the berth is folded.

The back cushion is protected by a guard rail directly over it, about $2\frac{1}{2}$ inches wide. To prevent the back cushion from sliding down, fasten small snap hooks to the rail and have rope eyes sewed to the two upper corners of the cushion, to receive them.

This berth affords large locker space for blankets, pillows, etc., underneath the seat or it can be built with drawers instead.

HARRY A. MOTZ,
Philadelphia, Pa.



AMERICAN MARINE MOTORS



Alphabetical List of the Makes of Motors Included in the Classified Table With the Names and Addresses of Their Manufacturers.

Name of Motor.	Manufacturer and Address.	Name of Motor.	Manufacturer and Address.	Name of Motor.	Manufacturer and Address.
Acadia	Acadia Gas Engine Co., Ltd., Bridgewater, N. S.	Guarantee	Guarantee Motor Co., Hamilton, Ont., Can.	Portage	Portage Boat & Eng. Co., Portage, Wis.
Achilles	Atkin-Wheeler Co., Huntington, L. I.	Hall	Hall Gas Eng. Co., Inc., Philadelphia, Pa.	Racine	Motor Cars Co., Racine, Wis.
Admiral	Affiliated Mfg. Co., Milwaukee, Wis.	Harris	Harris Eng. Co., Wilmington, Delaware.	Ralaco	The S. M. Jones Co., Toledo, O.
Aerothrust	Aerothrust Eng. Co., Chicago, Ill.	Harris Valveless	Harris Patents Co., Phila, Pa.	Red Wing and Red	Red Wing Motor Co., Red Wing, Minn.
Alexander & Cox	Alexander & Cox Co., Chicago, Ill.	Hazard	Hazard Motor Mfg. Co., Rochester, N. Y.	Wing	Regal Gasoline Eng. Co., Coldwater, Mich.
American Boy	Bruns, Kimball Co., N. Y. C.	Hettinger	Hettinger Eng. Co., Bridgeport, N. J.	Reliance	H. L. F. Trebert Eng. Wks., Rochester, N. Y.
American-Detroit	American Eng. Co., Detroit, Mich.	Hitchcock	The Hitchcock Gas Eng. Co., Bridgeport, Conn.	Reliance-Continental	Continental Motor Mfg. Co., Detroit, Mich.
Anderson	Anderson Eng. Co., Chicago, Ill.	Holliday	Kuehl Bros. Engineering Wks., Chicago, Ill.	Remington Oil	The Remington Oil Eng. Co., N. Y. C.
Aristox	Black Rock Mach. Co., Bridgeport, Conn.	Holmes	The Holmes Motor Co., Inc., West Mystic, Conn.	Rice	Rice Bros. Co., East Boothbay, Me.
Atlas	Atlas Gas Eng. Co., Oakland, Cal.	Honest Injun	The Byers, Ltd., Toronto, Canada.	Roberts	The Roberts Motor Co., Sandusky, O.
Automatic	Automatic Mach. Co., Bridgeport, Conn.	Hoosier "Sure Shot"	Hoosier Motor Co., Goshen, Ind.	Robert's Motor	Robert's Motor Wks., Lachine, Quebec.
Barber	Barber Bros., Syracuse, N. Y.	Hubbard	Hubbard Motor Co., Middle-town, Conn.	St. Lawrence	St. Lawrence Eng. Co., Brockville, Canada.
Barker	C. L. Barker, Norwalk, Conn.	Imperial	Bruce Stewart & Co., Ltd., Charlottetown, P. E. I., Canada.	Rochester	Roch. Gas Engine Co., Rochester, N. Y.
Beilfuss	Brown, Mach. & Eng. Co., Lansing, Mich.	Ithaca	Champaign Bros., Ithaca, N. Y.	Sagamore	Sagamore Motor Wks., Lynn, Mass.
Belle Isle	Concrete Form & Eng. Co., Detroit, Mich.	Johnson	Johnson Bros. Motor Co., Terre Haute, Ind.	Samson	Samson Iron Wks., Stockton, Cal.
Blanchard Oil Engine	The Blanchard Mach. Co., Cambridge, Mass.	Kahlenberg	Kahlenberg Bros. Co., Two Rivers, Wis.	Schaefer	Schaefer Mfg. Co., Berlin, Wis.
Brennan	The Brennan Motor Mfg. Co., Syracuse, N. Y.	Kemp	Kemp Machine Wks., Munice, Ind.	Schneider	Schneider Eng. Wks., San Francisco, Cal.
Bridgeport	The Bridgeport Motor Co., Inc., Bridgeport, Conn.	Kermath	Kermath Mfg. Co., Detroit, Mich.	Scripps	Scripps Motor Co., Detroit, Mich.
Brown-Collins	The Brown-Collins Gas Engine Co., Hartford, Conn.	Knox	Camden Anchor-Rockland Mch. Co., Camden, Me.	S-H-M	Schofield-Holden Machine Co., Ltd., Toronto, Canada.
Buda	The Buda Co., Harvey, Ill.	Kohan	Kohan Mfg. Co., Milwaukee, Wis.	Sieverkropp	Sieverkropp Eng. Co., Inc., Racine Jct., Wis.
Bud-E	The Carlyle Johnson Mach. Co., Manchester, Conn.	Kuhner	Kuhner Eng. Co., Oxford, Md.	Smalley	Smalley General Co., Bay City, Mich.
Buffalo	Buffalo Gasoline Motor Co., Buffalo, N. Y.	L-A	Lockwood-Ash Motor Co., Jackson, Mich.	Speedway	Gas Eng. & Power Co. & C. L. Seabury Co., Morris Heights, N. Y. C.
Cady	C. N. Cady Co., Canastota, N. Y.	Lamb	Lamb Eng. Co., Clinton, Iowa.	Spinaway	Spinaway Boat Motor Co., Freeport, Ill.
Caille	Caille Perfection Motor Co., Detroit, Mich.	Lawley	Geo. Lawley & Son Corp., Neponset, Mass.	Standard	Standard Motor Construction Co., Jersey City, N. J.
Campbell	Campbell Motor Co., Wayzata, Minn.	Leary	Leary Gasoline Eng. Co., Rochester, N. Y.	Standard (Frisco)	Standard Gas Engine Co., San Francisco, Cal.
Canadian Beaver	Canadian Beaver Co., Toronto, Ont.	Leighton	H. J. Leighton, Syracuse, N. Y.	Stanley	The Stanley Co., Salem, Mass.
Capital	Fifield Bros. Co., Augusta, Me.	Lisk	Geo. A. Lisk, Detroit, Mich.	Sterling	Sterling Engine Co., Buffalo, N. Y.
Capitol	Auto Engine Wks., St. Paul, Minn.	Low-Victor	Loew-Victor Eng. Co., Chicago, Ill.	Stork	De Foe Boat & Motor Wks., Bay City, Mich.
Carl	Carl Engine Wks., Phila, Pa.	Mason Jäger	Jäger Eng. Co., Boston, Mass.	Strang	Strang Eng. Co., Harvey, Ill.
Clay	The Clay Eng. Co., Cleveland, O.	Maximotor	Maximotor Makers, Detroit, Mich.	Strelinger	Strelinger Marine Eng. Co., Detroit, Mich.
Clifton	Clifton Motor Works, Cincinnati, O.	Mercury	Mercury Motor Co., N. Y. C.	Sweet	Sweet Mfg. Co., Detroit, Mich.
Craig	James Craig Eng. & Mach. Wks., Jersey City, N. J.	Mianus	The Mianus Motor Wks., Stamford, Conn.	T & M	Termaat & Monahan Co., Oshkosh, Wis.
Curtiss	Curtiss Motor Co., Hammondsport, N. Y.	Michigan	Michigan Wheel Co., Grand Rapids, Mich.	Toledo	Universal Mach. Co., Bowling Green, O.
DeLong	DeLong Eng. Co., Webster, N. Y.	Miller	Miller Gas & Vacuum Eng. Co., Chicago, Ill.	Toppan	Toppan Boat Mfg. Co., Boston, Mass.
De Mooy	De Mooy Bros., Cleveland, O.	Missouri	Missouri Eng. Co., St. Louis, Mo.	Troyer-Fox	Seattle-Astoria Iron Wks., Seattle, Wash.
Detroit	Detroit Eng. Wks., Detroit, Mich.	Mohawk	S. & R. Mfg. Co., Schenectady, N. Y.	20th Century	The N. Y. Yacht Launch & Eng. Co., Morris Heights, N. Y. C.
Dice	Dice Engine Co., Anderson, Ind.	Monarch	Grand Rapids Gas Eng. Co., Grand Rapids, Mich.	Tygard Engine	The Tygard Engine, Plainfield, N. J.
Doman	H. C. Doman Co., Oshkosh, Wis.	Monitor	Monitor Boat and Eng. Co., Newark, N. J.	Valveless	Nichols & Wright Motor Co., Buffalo, N. Y.
Eagle	Standard Co., Torrington, Conn.	Morristown	Monitor Boat & Eng. Co., New-Wks., Morristown, N. Y.	Van Blerck	Van Blerck Motor Co., Monroe, Mich.
Eclipse	Traverse City Iron Wks., Traverse City, Mich.	Morton	Morton Motor Co., Detroit, Mich.	Vanguard	Geo. E. Belcher, Stoughton, Mass.
Elbridge	Geer & Miller, Rochester, N. Y.	Motorgo	Sears Roebuck & Co., Chicago, Ill.	Vim	The Vim Motor Co., Sandusky, O.
Elo	The Elo Co., Bayonne, N. J.	Motorow	Motorow Eng. Co., Chicago, Ill.	Vulcan	Vulcan Eng. Wks., Phila, Pa.
Emerson	The Herfurth Eng. Co., Alexandria, Va.	Murray & Tregurtha	Murray & Tregurtha Co., S. Boston, Mass.	Waterman	Waterman Marine Motor Co., Detroit, Mich.
Emery	Frank M. Emery, Kennebunkport, Me.	Mystic	Mystic Motor Co., Inc., Mystic, Conn.	Watertown	Watertown Motor Co., Watertown, N. Y.
Erd	Erd Motor Co., Saginaw, W. S., Mich.	Nieland	J. E. Nieland & Co., San Francisco, Cal.	Watkins	Watkins Motor Co., Cincinnati, O.
Evansville	Evansville Gas Eng. Wks., Evansville, Ind.	Niseco	New London Ship & Eng. Co., Groton, Conn.	Waukesha	Waukesha Motor Co., Waukesha, Wis.
Evinrude	Evinrude Motor Co., Milwaukee, Wis.	Northwestern	Northwestern Motor Co., Eau Claire, Wis.	Westman	Enterprise Machine Co., Minneapolis, Minn.
Fairbanks-Morse	Fairbanks Morse & Co., Chicago, Ill.	No-Ro	No-Ro Motor Works, West Roxbury, Mass.	Willet	Willet Engine & Truck Co., Buffalo, N. Y.
Fay & Bowen	Fay & Bowen Eng. Co., Geneva, N. Y.	Ontario	A. E. Olmstead, Pulaski, N. Y.	Winton	Winton Gas Eng. & Mfg. Co., Cleveland, O.
Ferro	Ferro Mach. & Foundry Co., Cleveland, O.	Oriole	Page Engineering Co., Baltimore, Md.	Wisconsin Consistent	Wisconsin Motor Mfg. Co., Milwaukee, Wis.
Frisbie	Frisbie Motor Co., Middletown, Conn.	Oxford	L. D. Robbins Co., Lynn, Mass.	Wisconsin-Valveless	Wisconsin Mach. & Mfg. Co., Milwaukee, Wis.
Fulton	Fulton Mfg. Co., Erie, Pa.	Palmer	Palmer Bros., Cos Cob, Conn.	Wolverine	Wolverine Motor Wks., Bridgeport, Conn.
Gilmore	Park Motor Wks., Inc., Detroit, Mich.	Parsons	The Parsons Motor Co., Ltd., Southampton, Eng.	Wood & Chute	Wood & Chute Mach. Co., Greenport, L. I.
Gladish	Gladish Bros. Mach. Wks., Chattanooga, Tenn.	Peerless	Peerless Marine Motor Co., Buffalo, N. Y.	Wright	C. T. Wright Engine Co., Chicago, Ill.
Grasser	Grasser Motor Co., Toledo, O.	Penrose	Penrose Motor, Inc., Woodbury, N. J.	Yale	Hear Engineering Co., Ltd., New Westminster, F. C.
Gray	Gray Motor Co., Detroit, Mich.	Pequot	New London Motor Co., New London, Conn.		
Greene	Geo. A. Lance, Watertown, N. Y.	Pierce-Budd	Pierce-Budd Co., Bay City, Mich.		
Grizzly Bear	Parrott & Harter, Olympia, Wash.	Pilot	Trump Bros. Machine Co., Wilmington, Del.		

Two Cycle Motors

On the following pages are shown the complete 1915 specifications of the leading makes of American Marine Motors. These are arranged in such an order as to allow the prospective purchaser to immediately locate the name of all engines of the particular size and power which he desires.

The data in the tables is divided into groups of two cycle and four cycle and these groups are further divided into heavy duty, medium duty and high speed classes. For the purpose of this table, heavy-duty motors are assumed to be those developing their rated horsepower at revolutions per minute of 500 or less, medium-duty motors are assumed to be those whose revolutions are from 501 to 800 inclusive and high-speed above this figure. These groups of high, medium and heavy-duty are further subdivided according to the number of cylinders, one, two, three, four, five, six, eight, nine or twelve.

When the manufacturers have given us a range in the horsepower or revolutions for any particular model we have chosen the higher values in every case. We have allowed the manufacturer to state the name of the fuels on which his motor will run and in the table when no letter follows the name of the motor it

is understood that same runs best on only gasoline, but where letters follow, G stands for gasoline, K for Kerosene, C for crude oil, D for distillate, A for alcohol, F for fuel oil and P for producer gas, and these letters signify that the motors will operate satisfactorily on these fuels.

To use the table: suppose one has settled in his own mind that for his boat he should have a motor developing between 12 and 15 horsepower to give him the speed that he desires to obtain. He knows from experience that the type of his hull demands that he should have a motor turning up 500 or less revolutions per minute for the best results, and he has decided that it is a two-cylinder, four-cycle motor which he wants. Now all he has to do is to turn to the four-cycle, heavy-duty table and under the heading, Two Cylinders, he will find thirty-two motors

between 12 and 15 horsepower. From the weight data given, some of these may be eliminated from the possibility list as being too heavy or too light for his particular case. If the kind of fuel to be used is a deciding factor, then he finds the information given also. But should he find that all of the motors given are too heavy then the thing to do is to choose a medium-duty model of the desired power. So by referring to the two-cylinder, medium-duty division he will find these several motors which only turn over slightly faster than his previous limit of 500 r.p.m. In a similar manner, had the buyer desired a two-cycle motor, of from 12 to 15 h.p. instead of a four-cycle one, he could have just as readily located all of these sizes of a given number of cylinders, that are on the market for 1915. Again, if it is only an outboard motor which interests him, then he will find some twenty-three different models of these listed together. The weights given include the reverse gear except where the asterisk is used.

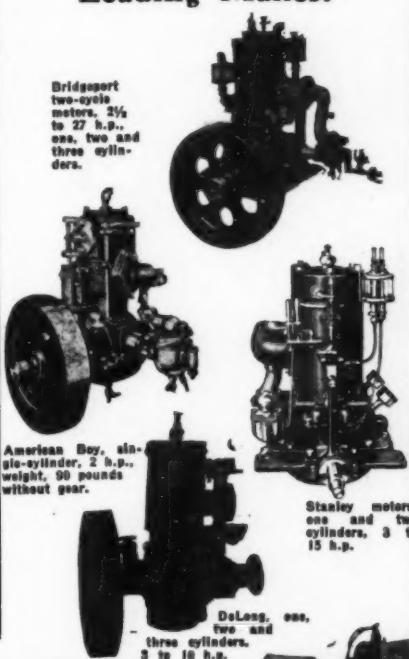
Lack of space naturally prevents us from showing illustrations of all models given in the tables, and to be consistent we show but one model of any manufacturer.

Heavy Duty R.P.M. 500 and Less.

One Cylinder.

RATED H.P.	MAKE	BORE AND STROKE, R.P.M.	WT.
1 1/2	Hubbard G. K.	3 1/2 x 3 1/2 450	127*
2	Palmer	3 1/2 x 3 1/2 500	135*
2 1/2	Bridgeport G. K.	3 1/2 x 4 500	170
3	Acadia	4 x 3 1/2 500	150*
3	Automatic	4 1/2 x 4 500	205*
3	Hubbard G. K.	4 x 4 1/2 450	213
3	Stanley G. K.	4 x 3 1/2 500	230
3 1/2	Ithaca	4 1/2 x 4 1/2 500	175*
3 1/2	Palmer	4 1/2 x 4 1/2 400	240
3 1/2	Palmer	4 1/2 x 4 1/2 475	220*
4	Bridgeport G. K.	4 1/2 x 5 500	275
4	Hubbard G. K.	4 1/2 x 5 450	266
4	Imperial	4 x 3 1/2 500	220
5	Acadia	4 1/2 x 5 500	300*
5	Automatic	5 1/2 x 5 500	340*
5	Bridgeport G. K.	5 1/2 x 5 500	320
5	Hubbard G. K.	5 x 5 1/2 400	335
5	Imperial	4 1/2 x 4 500	275
5	Mianus G. K.	4 1/2 x 5 500	350
5	Oriole G. K.	4 1/2 x 5 475	356
5	Smalley G. K.	4 1/2 x 5 1/2 450	...
5	Speedway	4 1/2 x 5 500	350
5	Stanley G. K.	4 1/2 x 5 500	320
5	Eagle G. K.	4 1/2 x 6 450	425*
5	Palmer	4 1/2 x 6 450	325*
5	Kahlenberg G. K. D.	5 x 5 500	400
6	Mystic	4 x 5 500	400
6	Palmer	4 x 5 500	350*
6	Pequot G. K.	5 1/2 x 5 1/2 500	380
6	Vim G. K.	4 1/2 x 5 450	346
6	Waterman	4 x 4 500	150
6	Wood & Chute	3 1/2 x 6 500	475
6 1/2	Acadia	5 x 5 500	300*
6 1/2	Barker	5 1/2 x 5 500	350
7	Bridgeport G. K.	5 1/2 x 6 450	350*
7	Eagle G. K.	6 x 6 450	520
7	Hubbard G. K.	6 x 6 350	525
7	Kahlenberg G. K. D.	5 1/2 x 6 500	400
7	Ontario	5 x 5 450	300
7	Oriole G. K.	5 1/2 x 6 450	325
7	Remington Oil K. C.	5 1/2 x 6 500	800
7	Fay & Bowen	5 1/2 x 6 500	665
7 1/2	Fulton G. K.	5 1/2 x 6 500	320*
7 1/2	Guarantees G. K. D.	5 x 6 500	350*
7 1/2	Knox	5 1/2 x 6 500	550

Representative Motors of Leading Makes.



Waterman motors, 2 1/2 to 24 h.p., one, two and four cylinders, in addition to an outboard motor.

Monitor, built in one, two and three-cylinder sizes, 7 1/2 to 36 h.p.

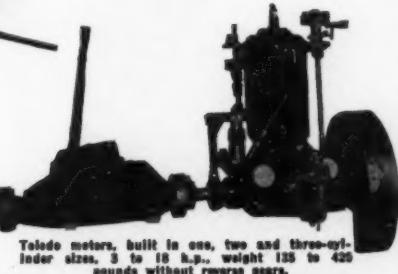


DeLong, one, two and three cylinders, 3 to 16 h.p.

Two Cylinders.

RATED H.P.	MAKE	BORE AND STROKE, R.P.M.	WT.
4	Palmer	3 1/2 x 3 1/2 500	180*
6	Stanley G. K.	4 x 3 1/2 500	350
7	Ithaca	4 1/2 x 4 1/2 500	290
8	Bridgeport G. K.	4 1/2 x 5 500	435*
8	Palmer	4 1/2 x 4 500	345*
10	Acadia	4 1/2 x 5 500	450*
10	Bridgeport G. K.	5 1/2 x 5 500	570
10	Imperial	4 1/2 x 4 500	400
10	Mianus G. K.	4 1/2 x 5 500	600
10	Oriole G. K.	4 1/2 x 5 475	625
10	Smalley G. K.	4 1/2 x 5 1/2 450	...
10	Stanley G. K.	5 1/2 x 4 500	550

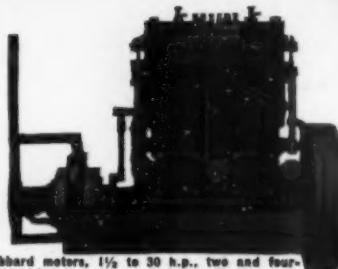
Stevinger outboard motor. Motors of this make are also manufactured in one, two, three and four-cylinder sizes, and 4 to 40 h.p.



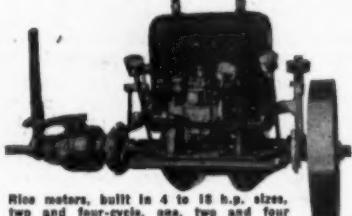
Toledo motors, built in one, two and three-cylinder sizes, 3 to 18 h.p., weight 125 to 420 pounds without reverse gears.

Koban, 3 h.p. two-cylinder outboard motor.

Two-Cycle Motors.



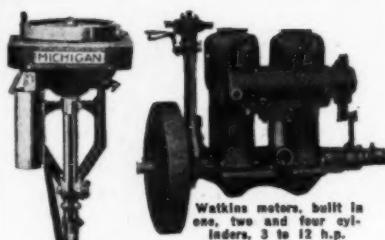
Hubbard motors, 1½ to 30 h.p., two and four-cycles, one, two and four cylinders.



Rice motors, built in 4 to 18 h.p. sizes, two and four-cycles, one, two and four cylinders.

16	Acadia	5½ x 6	500	650*
16	Pequot G. K.	6½ x 6½	400	980
17	Blanchard Oil K. C.	6½ x 6	500	1,800
17	Oriole G. K.	6½ x 6½	425	1,170
18	Bridgeport G. K.	6½ x 7	400	1,075
18	Kahlenberg G. K. D.	6 x 6	450	1,100
20	Fay & Bowen	6½ x 6½	475	1,550
20	Guarantee G. K. D.	5½ x 5	...	650*
20	Imperial	5½ x 6	500	900
20	Mianus G. K.	6½ x 7	375	1,345
20	T. & M. G. K.	5½ x 6	500	920
22	Remington Oil K. C.	6½ x 6	500	1,100
24	Guarantee G. K. D.	7 x 7	...	...
24	Kahlenberg G. K. D.	6½ x 7	475	1,300
24	Remington Oil K. C.	7 x 8	400	2,100
24	Sagamore G. K.	7 x 7	400	950
25	Hubbard G. K.	7 x 7½	450	1,280
25	Monitor	6½ x 6½	450	840
30	Fair.-Morse K. C. D.	8 x 10	400	3,900
30	Kahlenberg G. K. D.	7 x 8	400	1,800
35	Remington Oil K. C.	8½ x 8	400	2,300
36	Kahlenberg G. K. D.	7½ x 8	400	2,000
40	Barber	8 x 8	...	1,950
40	Sagamore G. K.	8 x 8	350	1,200
45	Blanchard Oil K. C.	10 x 10	320	6,500
50	Fair.-Morse K. C. D.	10 x 12½	340	7,300
55	Kahlenberg	9 x 10	375	3,900
120	(Semi-Diesel) C. F.	9 x 13	300	14,000
225	Harris Diesel F.	12 x 21	200	27,000
400	Harris Diesel F.	16 x 30	140	.....

Watkins motors, built in one, two and four cylinders, 3 to 12 h.p.



Michigan outboard motor.



Mohawk motors, 3½ to 60 h.p., one, two, three and four cylinders.

Three Cylinders.

RATED H.P.	MAKE.	BORE AND STROKE, R.P.M.	WT.
10	Ithaca	4½ x 4 3/16	500
15	Imperial	4½ x 4	500
18	Vim G. K.	5 x 5	450
22	Knox	5½ x 6½	500
23	Remington Oil K. C.	5½ x 6	1,600
24	Acadia	5½ x 6	500
27	Bridgeport G. K.	6½ x 7	400
27	Kahlenberg G. K. D.	6 x 6	475
34	Remington Oil K. C.	6½ x 6	3,400
36	Kahlenberg G. K. D.	6½ x 7	450
36	Monitor	6½ x 6½	450
37	Remington Oil K. C.	7 x 8	400
43	Fair.-Morse K. C. D.	8 x 10	400
45	Kahlenberg G. K. D.	7 x 8	400
54	Kahlenberg G. K.	7½ x 8	400
55	Remington Oil K. C.	8½ x 8	400
60	Barber	8 x 8	...
70	Blanchard Oil K. C.	10 x 10	320
70	Fair.-Morse K. C. D.	10 x 21½	340
75	Kahlenberg	9 x 10	375
85	(Semi-Diesel) C. F.	.....	5,500

Four Cylinders.

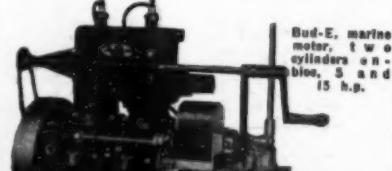
RATED H.P.	MAKE.	BORE AND STROKE, R.P.M.	WT.
20	Imperial	4½ x 4	500
32	Remington Oil K. C.	5½ x 6	500
46	Remington Oil K. C.	6½ x 6	500
60	Fair.-Morse K. C. D.	8 x 10	400
63	Mercury G. K.	7½ x 7	420
75	Remington Oil K. C.	8½ x 8	400
100	Blanchard Oil K. C.	10 x 10	320
100	Fair.-Morse K. C. D.	10 x 21½	340
240	Harris Diesel F.	9 x 13	300
450	Harris Diesel F.	12 x 21	200
800	Harris Diesel F.	16 x 30	140

Medium Duty:

R. P. M. 501-800

One Cylinder.

RATED H.P.	MAKE.	BORE AND STROKE, R.P.M.	WT.
1½	Barker	3 5/16 x 3 3/4	600
1½	Alexander & Cox	3 1/2 x 3	600
1½	Brown-Collins	3 x 3	88
1½	Eagle	3 x 3	126
1½	Eclipse	3 1/16 x 3	...
1½	Gilmore G. K.	3 x 2 1/2	800
1½	Ithaca	3 x 3	50*
1½	L-A	3 x 3	700
2	Acadia	4 x 4	650
2	American Boy	3 x 3	600
2	American Detroit G. K.	3 x 3 1/2	700
2	Caille G. K.	3 x 3 1/2	700
2	Detroit G. K.	2 1/2 x 3 1/2	800
2	Northwestern	2 1/2 x 3 1/2	800

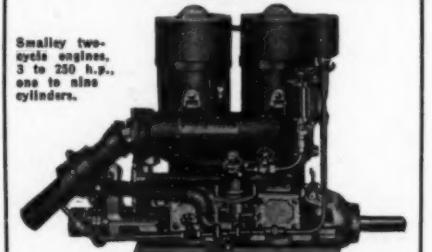


Evinrude outboard motors, single cylinder, 2 and 3 1/2 h.p. models.

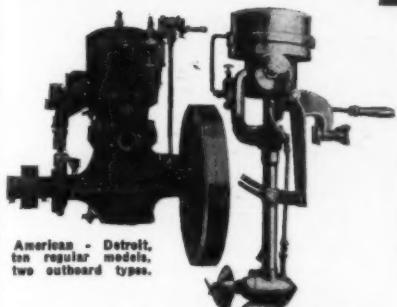


2	Schneider	3 1/2 x 3	800	115*
2	Strelinger	3 x 2 1/2	800	60*
2	T. & M. G. K.	3 x 3 1/2	700	138
2	Toppan	3 x 3 1/2	700	150
2	Barber	3 1/2 x 3 1/2	750	75*
2	Barker	4 1/2 x 4 1/2	550	170*
2	Caille G. K.	3 1/2 x 3 1/2	700	135*
2	Detroit G. K.	3 x 3 1/2	800	110*
2	Eagle G. K.	3 1/2 x 4	515	190
2	Guarantee G. K.	3 1/2 x 3 1/2	...	135*
2	Hubbard G. K.	3 1/2 x 4	625	158
2	Ithaca	3 1/2 x 3 1/2	700	100*
2	L-A	3 1/2 x 3 1/2	700	100*
2	Mortorgo	3 1/2 x 3 1/2	750	100*
2	Palmer	3 1/2 x 3 1/2	700	125*
2	Valveless	3 x 3	720	90*
2	Waterman	2 1/2 x 3	800	54
3	Cady	3 1/2 x 3 1/2	700	90*
3	DeLong	3 x 3 1/2	750	...
3	Detroit G. K.	3 1/2 x 3 1/2	800	125*
3	Eclipse	3 1/2 x 3 1/2	800	100*
3	Ferro G. K.	3 1/2 x 3 1/2	800	...
3	Greene	3 1/2 x 3 1/2	800	100*
3	Imperial	3 1/2 x 3	600	120
3	Kahlenberg G. K. D.	3 1/2 x 3 1/2	750	125
3	Knox	4 x 4	600	235
3	Mianus	4 x 4	550	210
3	Pilot	3 1/2 x 4	800	270
3	Red Wing	3 1/2 x 3 1/2	600	175*
3	Rice	4 x 4	550	125*
3	Sagamore G. K.	3 1/2 x 4	600	140
3	Smalley G. K.	3 1/2 x 4	600	...
3	Stork	3 1/2 x 3 1/2	700	120
3	T. & M. G. K.	3 1/2 x 3 1/2	650	168
3	Toledo	3 1/2 x 3 1/2	750	135*
3	Toppan	3 1/2 x 3 1/2	700	200
3	Wood & Chute	4 x 4	600	262
3½	De Mooy	4 1/2 x 5	800	235
3½	Eagle G. K.	3 1/2 x 5	650	252*
3½	Fairbanks-Morse	4 3/10 x 4	...	166*
3½	Eclipse	3 1/2 x 3 1/2	800	149*
3½	Fulton G. K.	3 1/2 x 4	650	160*
3½	Valveless	3 1/2 x 3 1/2	720	121
4	American Detroit G. K.	3 1/2 x 3 1/2	700	140*
4	Barber	4 x 4	600	165
4	Barker	4 9/10 x 5	550	220
4	Cady	4 1/2 x 4	700	135*
4	Caille	3 1/2 x 3 1/2	700	150
4	Detroit G. K.	3 1/2 x 3 1/2	800	155
4	Kahlenberg G. K. D.	4 x 4	650	160
4	Kuhner	4 x 5	700	200*
4	L-A	4 x 4	700	130*
4	Mortorgo	3 1/2 x 3 1/2	750	130*
4	Northwestern	4 x 4 1/2	700	...
4	Palmer	4 1/2 x 4 1/2	650	210*
4	Pequot G. K.	4 1/2 x 4 1/2	550	320
4	Remington Oil K. C.	3 1/2 x 5	700	550
4	Red Wing	4 x 4	800	210*

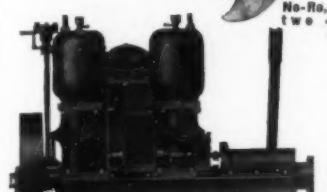
Smalley two-cylinder engines, 3 to 250 h.p., one to nine cylinders.



Two-Cycle Motors.



American - Detroit, two regular models, two outboard types.



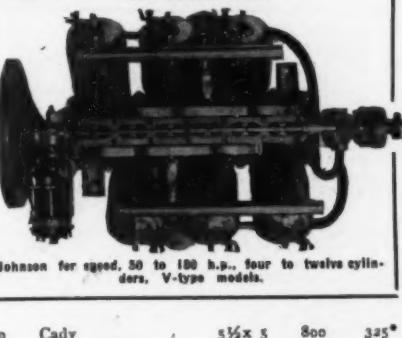
Penrose, special cycle motors, 7 to 45 h.p., one, two and four cylinders.

Two Cylinders.

RATED H.P.	MAKE.	BORE AND STROKE.	R.P.M.	WT.
3	Alexander & Cox	3 1/8 x 3	600	135*
3	Brown-Collins	3 x 3	800	115*
3 1/2	Gilmore, G. K.	3 x 3 1/2	800	167*
4	Sieverkropp	3 x 3 1/2	600	250*
4 1/2	Detroit, G. K.	3 1/2 x 3 1/2	800	250*
5	Barber	3 1/4 x 3 1/2	750	130
5	Barker	3 1/4 x 4 1/2	550	290*
5	Ithaca	3 1/2 x 3 1/2	700	150*
5	Palmer	3 1/4 x 3 1/2	700	180*
6	Alexander & Cox	4 x 5	600	395
6	Cady	3 1/4 x 3 1/2	700	140
6	De Long	3 x 3 1/2	750	***
6	Detroit, G. K.	3 1/4 x 3 1/2	800	275*
6	Eclipse	3 1/2 x 3 1/2	***	175*
6	Ferro, G. K.	3 1/4 x 3 1/2	800	***
6	Greene	3 1/2 x 3 1/2	800	185*
6	Guarantee, G. K.	3 1/2 x 3 1/2	***	225*
6	L-A	3 1/2 x 3 1/2	700	160*
6	Mianus, G. K.	4 x 4	550	365
6	Motorgo	3 1/2 x 3 1/2	750	160*
6	Pilot	3 1/2 x 4	800	400
6	Sagamore, G. K.	4 x 4	600	260
6	Stork	3 1/2 x 3 1/2	700	200
6	Vim, G. K.	3 1/2 x 3 1/2	800	198
6	Wood & Chute	4 x 4	600	400
7	Caillé, G. K.	3 1/2 x 3 1/2	700	250
7	Eagle, G. K.	3 1/4 x 4	650	355
7	Eclipse	4 3/16 x 4	***	225*
7	Fairbanks-Morse	3 1/4 x 3 1/2	800	203*
7	Fulton, G. K.	3 1/4 x 4	650	265
7	Hubbard, G. K.	4 x 4 1/2	700	417
7	Stanley, G. K.	4 x 3 1/2	550	350
7	Toledo	3 1/2 x 3 1/2	750	280*
7 1/2	Fairbanks-Morse	5 1/2 x 6	550	400*
8	Acadia	4 x 4	650	285
8	American Detroit, G. K.	3 1/4 x 3 1/2	800	220*
8	American Detroit, G. K.	3 1/4 x 3 1/2	800	235
8	Aristox	3 3/16 x 3 1/2	650	550
8	Barber	4 x 4	600	285
8	Barker	4 9/16 x 5	500	380
8	Cady	4 1/4 x 4	700	205*
8	Caillé, G. K.	3 1/2 x 3 1/2	800	300
8	Detroit, G. K.	3 1/4 x 3 1/2	800	290*
8	Eclipse	4 9/16 x 4 1/2	***	300
8	Kahlenberg, G. K. D.	4 x 4	750	350
8	Kuhner, G. K.	4 x 5	750	350*
8	L-A	4 x 4	700	225*
8	Motorgo	4 x 4	750	225*
8	Pequot, G. K.	4 3/4 x 4 1/2	600	720
8	Red Wing	4 x 4	800	360
8	Schneider	3 1/4 x 3 1/2	800	350
8	S-H-M	3 1/4 x 3 1/2	800	214
8	Stork	3 1/4 x 3 1/2	700	400
8	T. & M., G. K.	4 x 4	700	393
8	Toppin	4 x 4	700	350
8	Valveless	3 1/2 x 3 1/2	720	210
8	Wood & Chute	4 1/2 x 5	550	590
9	Brown-Collins	4 x 4	800	238
9	Canadian Beaver, G. K.	4 x 4	800	...
9	Hubbard, G. K.	4 1/2 x 5	700	460
9	Knox	4 1/2 x 4 1/2	600	450
9	Smalley, G. K.	3 1/2 x 4	600	...
9	Acadia	4 x 4	750	285*
10	Detroit, G. K.	4 1/2 x 4 1/2	800	340*
10	Erd, G. K.	4 x 4	800	265
10	Fay & Bowen	4 1/2 x 4 1/2	550	600
10	Fulton, G. K.	4 1/2 x 5	600	400
10	Kuhner, G. K.	5 x 5	700	500*
10	Mohawk, G. K.	4 1/2 x 4 1/2	700	410
10	Northwestern	4 x 4 1/2	700	...
10	Palmer	4 1/2 x 4 1/2	650	325
10	Strelinger	4 x 3 1/2	800	245
10	Vanguard	4 x 4	700	435
10	Vim, G. K.	4 x 4	800	271
10	Wisconsin Valveless	4 x 4	750	275
10	Wood & Chute	5 x 5	550	700
11	Knox	5 x 5 1/4	550	550
12	Barber	4 1/4 x 4 1/2	600	375
12	Cahillenberg, G. K. D.	5 x 5	550	650
12	Canadian Beaver, G. K.	4 1/4 x 4 1/2	800	...
12	Detroit, G. K.	4 1/4 x 4 1/2	800	400*
12	Erd, G. K.	4 1/4 x 4 1/2	800	265
12	Fay & Bowen	4 1/4 x 4 1/2	550	600
12	Fulton, G. K.	4 1/4 x 5	600	400
12	Kuhner, G. K.	5 x 5	700	500*
12	Mohawk, G. K.	4 1/4 x 4 1/2	700	410
12	Northwestern	4 x 4 1/2	700	...
12	Palmer	4 1/4 x 4 1/2	650	325
12	Strelinger	4 x 3 1/2	800	245
12	Vanguard	4 x 4	700	507
12	Barber	4 1/4 x 4 1/2	600	325
12	Capitol	4 1/4 x 5	600	375
12	Erd, G. K.	4 1/4 x 4 1/2	800	375
12	Kuhner, G. K.	5 x 5	700	675
12	Mohawk, G. K.	4 1/4 x 4 1/2	700	545
12	Palmer	4 1/4 x 4 1/2	550	600*
12	Vanguard	4 x 4	700	507
12	Barber	4 1/4 x 4 1/2	600	325
12	Capitol	4 1/4 x 5	600	375
12	Erd, G. K.	4 1/4 x 4 1/2	800	485*
12	Kuhner, G. K. D.	5 x 5	550	800
12	Stork	4 1/4 x 4 1/2	700	420*
12	Fair-Morse, G. K.	5 x 4 1/2	800	600*
12	Gladish	4 1/4 x 5	600	700
12	Kahlenberg, G. K. D.	5 x 6	550	1,000



Wisconsin Valveless, two and four-cylinder engines, 2 to 35 h.p., including two rowboat motors.



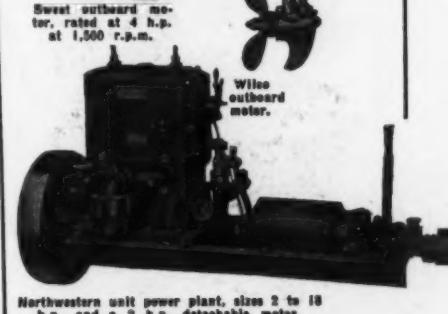
Johnson for speed, 30 to 100 h.p., four to twelve cylinders, V-type models.

Three Cylinders.

RATED H.P.	MAKE.	BORE AND STROKE.	R.P.M.	WT.
5	Alexander & Cox	3 1/8 x 3	600	190*
5 1/2	Gilmore, G. K.	3 x 2 1/2	800	97*
6	Barber	3 1/4 x 3 1/2	750	205
6	Palmer	3 1/4 x 3 1/2	600	230*
6	Greene	3 1/2 x 3 1/2	800	250*
6	Kahlenberg, G. K. D.	4 x 4	750	350
6	De Long	3 x 3 1/2	750	...
6	Eagle, G. K.	3 1/4 x 4	650	460
6	Aristox	3 3/16 x 3 1/2	650	700
6	Emerson	5 x 5	600	287
6	Bridgeport	5 1/4 x 5 1/2	800	570
6	Barber	6 1/2 x 6 1/4	600	695
6	Gray	5 1/2 x 5	800	630
6	Smalley, G. K.	5 1/2 x 5 1/2	750	...
6	Pierce-Budd	6 1/2 x 7	650	675
20	Cady	5 1/2 x 5	800	325*
20	Cahillenberg, G. K.	5 1/4 x 5	800	600
20	Detroit, G. K.	5 1/4 x 5	800	700*
20	Emerson	5 x 5	600	287
22	Bridgeport	5 1/4 x 5 1/2	800	570
22	Barber	6 1/2 x 6 1/4	600	695
22	Gray	5 1/2 x 5	800	630
25	Smalley, G. K.	5 1/2 x 5 1/2	750	...
35	Pierce-Budd	6 1/2 x 7	650	675



Sweet outboard motor, rated at 4 h.p. at 1,500 r.p.m.

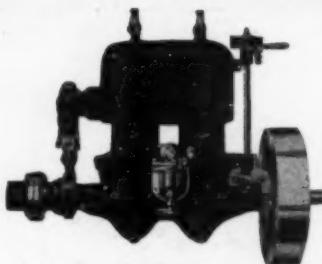


Wilco outboard motor.

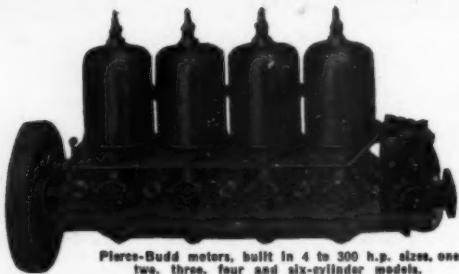
14	Caillé, G. K.	3 1/4 x 3 1/2	700	350*
14	Fair-Morse, G. K.	3 1/4 x 3 1/2	800	455*
14	Gladish	4 1/4 x 5	600	550
14	Kahlenberg, G. K. D.	5 x 6	550	850
14	Ontario	5 x 5	600	500
14	Stanley, G. K.	5 1/4 x 4 1/2	550	550
15	Barker	5 1/4 x 5 1/2	600	540
15	Detroit, G. K.	4 1/4 x 4 1/2	800	430*
15	Fairbanks-Morse	5 1/4 x 6	550	400*
15	Hubbard, G. K.	5 x 6 1/2	600	864
15	Monitor	5 x 5	600	435
15	Oxford	4 1/4 x 4 1/2	650	600
15	S-H-M.	4 1/4 x 5	750	480
15	Wisconsin Valveless	4 1/4 x 4 1/2	750	350
16	American Detroit, G. K.	3 1/4 x 3 1/2	800	450
16	Canadian Beaver, G. K.	5 x 5 1/2	600	435
16	Bridgeport	4 1/4 x 5	800	390
16	De Mooy	4 1/4 x 4 1/2	600	500
16	De Mooy	4 1/4 x 5	600	500
16	Kahlenberg, G. K. D.	5 1/2 x 6	525	950
16	Stork	5 1/2 x 5	700	555
16	Strelinger	5 1/4 x 4	800	390
18	Barber	5 1/4 x 5 1/2	600	535
18	Capital	4 1/4 x 5 1/2	600	575
18	Detroit, G. K.	4 1/4 x 5 1/2	800	700*
18	Northwestern	5 x 5	700	...
18	T. & M. G. K.	5 1/4 x 4 1/2	750	393
18	Vim, G. K.	5 1/4 x 5	700	475
20	American Detroit, G. K.	5 1/4 x 5	600	495*

Northwestern unit power plant, sizes 2 to 18 h.p., and a 2 h.p. detachable motor.

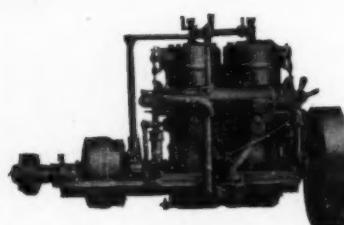
Two-Cycle Motors.



L-A motors, 1½ to 12 h.p., one and two cylinders.



Pierce-Budd motors, built in 4 to 300 h.p. sizes, one, two, three, four and six-cylinder models.



Knox motors, one, two and three cylinders, two-cycle, two and four-cylinder, four-cycle, 3 to 40 h.p.

RATED H.P.	MAKE.	BORE AND STROKE. R.P.M.	WT.	RATED H.P.	MAKE.	BORE AND STROKE. R.P.M.	WT.	RATED H.P.	MAKE.	BORE AND STROKE. R.P.M.	WT.
1½	Ontario	5 x 5 600	700	4	Alexander & Cox	3½ x 3 600	245*	20	Vanguard	4 x 4 700	699
2	Monitor	5 x 5 600	640	8	Gilmores, G.K.	3 x 2½ 800	135*	24	Fairbanks-Morse	4½ x 4½ 800	652
2½	S-H-M	4½ x 5 750	510	15	Eagle, G.K.	3½ x 4 650	508	25	Eagle, G.K.	4½ x 5 600	869
3	De Mooy	4½ x 5 800	580	16	Elbridge	3½ x 4 650	508	28	Gladish	4½ x 5 600	930
3½	Kahlenberg, G.K.D.	5½ x 6 1,200		18	Valveless	3½ x 3½ 800	340	28	Ontario	5 x 5 600	900
4	Stork	5 x 5 700	700	18	Caille, G.K.	3½ x 3½ 700	500	30	Barker	5½ x 5 600	875
4½	Barber	3½ x 5½ 600	690	20	Brown-Collins	4 x 4 800	400	30	S-H-M	4½ x 5 600	620
5	T. & M. G.K.	5 x 4½ 750	550	20	Penrose	4 x 5 700	550	36	T. & M., G.K.	5 x 4½ 750	720
5½	Vim, G.K.	5 x 5 700	615	20				40	Cady	5½ x 5 800	585*
6	Cady	5½ x 5 800	425*	20				40	Emerson	5 x 5 600	456
6½	Smalley	5½ x 5½ 750	...	20				45	Smalley, G.K.	5½ x 5½ 750	...
7	Barber	6½ x 6½ 600	985	20							

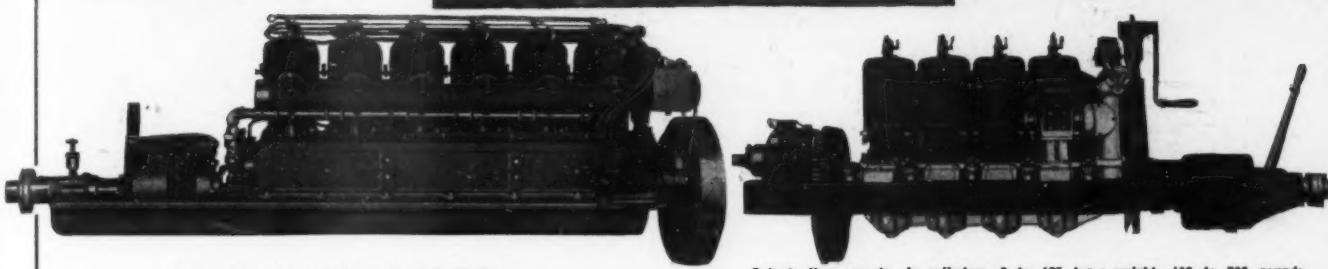
Four Cylinders.

RATED H.P.	MAKE.	BORE AND STROKE. R.P.M.	WT.	RATED H.P.	MAKE.	BORE AND STROKE. R.P.M.	WT.	RATED H.P.	MAKE.	BORE AND STROKE. R.P.M.	WT.
1½	Cady	3 x 2½ 1,005	45*	10	Elbridge	3½ x 3½ 1,400	130	20	Vanguard	4 x 4 700	699
2	Ontario	2½ x 3 900	50	10	Fulton, G.K.	3½ x 3½ 1,000	260	24	Fairbanks-Morse	4½ x 4½ 800	652
2½	Belle Isle, G.K.	3½ x 2½ 1,000	100	10	Morristown	4 x 4 900	180*	25	Eagle, G.K.	4½ x 5 600	869
3	Gray	3½ x 3½ 1,000	89	10	Penrose	3½ x 3½ 1,200	115	28	Gladish	4½ x 5 600	930
3	Leary, G.K.	3½ x 4 900	165	10	Rice	4 x 4 1,000	214	28	Ontario	5 x 5 600	900
3	Ontario	3½ x 3½ 900	125	10	Roberts, G.K.	4 x 3½ 1,000	290	28	Barker	5½ x 5 600	875
3	Roberts, G.K.	3½ x 3 1,000	141	10	Capital	3½ x 3½ 1,200	185	30	S-H-M	4½ x 5 600	620
3	St. Lawrence	3½ x 3½ 900	...	10	Elbridge	3½ x 3½ 1,400	175	30	T. & M., G.K.	5 x 4½ 750	720
3	Watkins	3 x 3 900	30*	10	Fulton, G.K.	3½ x 4 1,000	330	30	Caille, G.K.	4½ x 5 800	650
3½	Capital	3½ x 3½ 900	125	10	Morristown	4 x 4 900	180*	30	Pierce-Budd, G.K.	4½ x 5 600	875
3½	Eagle, G.K.	3½ x 3½ 1,000	128	10	Penrose	3½ x 3½ 1,200	115	30	Wisconsin Valveless	4½ x 4½ 900	435
3½	Erd, G.K.	3½ x 3½ 850	115	10	Rice	4 x 4 1,000	214	30	Capital	4½ x 4½ 1,200	390
3½	Mohawk, G.K.	3½ x 3½ 1,000	135	10	Roberts, G.K.	4 x 3½ 1,000	345	30	Elbridge	4½ x 4½ 1,200	285
3½	Penrose	3½ x 3½ 900	135	10	T. & M., G.K.	4 x 4 900	252	30	Erd, G.K.	4½ x 4½ 1,200	405
4	De Mooy	3½ x 3½ 900	165	10	Watertown	3½ x 4 920	240	30	Mohawk, G.K.	4½ x 4½ 1,200	405
4	Rochester, G.K.	3½ x 3½ 850	180	10	Eagle, G.K.	4½ x 4 900	330	35	Smalley, G.K.	4½ x 4½ 900	...
4	St. Lawrence	3½ x 4 900	...	10	Gray	4½ x 4 900	345	35	Elbridge	4½ x 4½ 1,200	200
5	Belle Isle, G.K.	3½ x 4 900	150	10	Mohawk, G.K.	4½ x 3½ 1,500	220	35	Gray	4½ x 4½ 1,200	765
5	Elbridge	3½ x 3½ 1,400	115	10	St. Lawrence	4 x 4 900	250	35	Mohawk, G.K.	5½-16 x 3½ 1,500	440
5	Fulton, G.K.	3½ x 4 1,000	160	10	Waterman	4 x 4 900	170	45	Robert's Motor	5½ x 6½ 1,000	525
5	Strelinger	4 x 3½ 900	150*	10	Gray	4½ x 4 950	372				
6	Eagle, G.K.	4½ x 4 900	240	10	Bud-E	4½ x 4 1,000	325				
6	Mohawk, G.K.	4½ x 4 900	155	10	Pierce-Budd, G.K.	4 x 4 1,000	200				
6	Pierce-Budd, G.K.	4 x 4 1,000	155	10	Smalley, G.K.	4½ x 4 900	...				
6	Smalley, G.K.	4½ x 4 900	150	10	Elbridge	4½ x 4 1,200	200				
6	Waterson	4 x 4 900	126	20	Mohawk, G.K.	4½ x 4 1,500	335				
7	Capital	4½ x 4 900	100	20	Red Wing	4½ x 4 1,500	300				
7	Gray	4½ x 4 900	205	20	Roberts, G.K.	5 x 5 1,000	350				
8	Fulton, G.K.	4½ x 5 1,000	285	20	Sagamore, G.K.	4½ x 5 1,050	380				
8	Rochester, G.K.	4½ x 5 850	300	20	Elbridge	4½ x 4 1,400	155				
10	Elbridge	4½ x 4 1,200	140	25							
12	Elbridge	4½ x 4 1,400	115	25							
13	Grasser	6 x 6 900	380	25							

One Cylinder.

RATED H.P.	MAKE.	BORE AND STROKE. R.P.M.	WT.	RATED H.P.	MAKE.	BORE AND STROKE. R.P.M.	WT.	RATED H.P.	MAKE.	BORE AND STROKE. R.P.M.	WT.
1½	Cady	3 x 2½ 1,005	45*	10	Mohawk, G.K.	3½ x 3½ 1,000	185	22	St. Lawrence	4½ x 5 900	500
2	Ontario	2½ x 3 900	50	10	Penrose	3½ x 3½ 900	185	23	Vim, G.K.	4 x 4 1,200	311
2½	Belle Isle, G.K.	3½ x 2½ 1,000	100	10	Rochester, G.K.	3½ x 3½ 1,000	260	24	Leary, G.K.	3½ x 4 1,100	326
3	Gray	3½ x 3½ 1,000	89	10	St. Lawrence	3½ x 4 900	...	24	Rochester, G.K.	4½ x 5 850	725
3	Leary, G.K.	3½ x 4 900	165	10	Gray	4 x 4 900	290	25	Pierce-Budd, G.K.	4½ x 5 850	270
3	Ontario	3½ x 3½ 900	125	10	Elbridge	3½ x 3½ 1,400	175	30	Wisconsin Valveless	4½ x 4½ 900	435
3	Roberts, G.K.	3½ x 3½ 1,000	141	10	Fulton, G.K.	3½ x 4 1,000	330	30	Capital	4½ x 4½ 1,200	390
3	St. Lawrence	3½ x 3½ 900	...	10	Morristown	4 x 4 900	180*	30	Elbridge	4½ x 4½ 1,200	285
3	Watkins	3 x 3 900	30*	10	Penrose	3½ x 4 1,000	345	30	Erd, G.K.	4½ x 4½ 1,200	405
4	Eagle, G.K.	3½ x 3½ 1,000	204	10	St. Lawrence	3½ x 4 900	400	30	Roberts, G.K.	4½ x 4½ 1,200	505
4	Erd, G.K.	3½ x 3½ 850	185	10	Gray	4½ x 4 1,000	390	30	Waukesha	4 x 4 1,000	500
5				10	Mohawk, G.K.	4½ x 3½ 1,500	290	30	Waterman	4 x 4 900	300
6				10				30	American Detroit, G.K.	4½ x 4½ 900	595
7				10				30	Waukesha	4½ x 4½ 1,000	650
7				10				32	Leary, G.K.	3½ x 4 1,100	397
7				10				32	Rochester, G.K.	4½ x 5 850	875
7				10				32	Waukesha	4 x 4 1,000	550
7				10				35	Wisconsin Valveless	4½ x 4½ 1,000	525
8				10				40	Elbridge	4½ x 4½ 1,200	305
8				10				40	Roberts, G.K.	4 x 3½ 1,000	485
8				10				40	Watertown	3½ x 4½ 920	390
8				10				40	Waukesha	4 x 4 1,000	500
8				10				40	Waterman	4 x 4 900	300
8				10				40	American Detroit, G.K.	4½ x 4½ 900	595
8				10				40	Waukesha	4½ x 4½ 1,000	650
8				10				40	Leary, G.K.	3½ x 4 1,100	397
8				10				40	Rochester, G.K.	4½ x 5 850	875
8				10				40	Waukesha	4 x 4 1,000	550
8				10				40	Wisconsin Valveless	4½ x 4½ 1,000	525
8				10				40	Elbridge	4½ x 4½ 1,200	305
8				10				40	Roberts, G.K.	4 x 3½ 1,000	485
8				10				40	Watertown	3½ x 4½ 920	390
8				10				40	Waukesha	4 x 4 1,000	500
8				10				40	Waterman	4 x 4 900	300
8				10				40	American Detroit, G.K.	4½ x 4½ 900	595
8				10				40	Waukesha	4½ x 4½ 1,000	650
8				10				40	Leary, G.K.	3½ x 4 1,100	397
8				10				40	Rochester, G.K.	4½ x 5 850	875
8				10				40	Waukesha	4 x 4 1,000	550
8				10				40	Wisconsin Valveless	4½ x 4½ 1,000	525
8				10				40	Elbridge	4½ x 4½ 1,200	305
8				10				40	Roberts, G.K.	4 x 3½ 1,000	485
8				10				40			

Two-Cycle Motors.



Stark motors, two and four-cycle, 3 to 75 h.p.

Roberts line, one to six cylinders, 3 to 125 h.p.; weight, 100 to 700 pounds.

Six Cylinders.

H.P.	MAKE.	BORE AND STROKE. R.P.M.	WT.
32	Rochester, G.K.	3 1/4 x 3 1/2 850	540
48	Leary, G.K.	3 1/4 x 4 1,100	550
48	Rochester, G.K.	4 1/2 x 5 850	1,200
60	Elbridge	4 1/2 x 4 1/2 1,200	700
60	Erd, G.K.	4 1/2 x 4 1/2 1,200	450
60	Pierce-Budd, G.K.	4 x 4 2,000	430
60	Roberts, G.K.	4 1/2 x 5 1,050	700
70	Elbridge	4 1/2 x 4 1/2 1,400	315
70	Emerson	5 x 5 1,000	350
70	Smalley, G.K.	4 1/2 x 4 1/2 900	...
75	Leighton	5 x 4 1,000	650
75	Roberts, G.K.	4 1/2 x 5 1,150	315
90	Johnson	5 x 4 1,400	398
90	Mercury	5 x 5 1,200	625
120	Smalley, G.K.	5 x 5 1/2 850	...
125	Roberts, G.K.	5 1/2 x 6 1,000	590
300	Pierce-Budd, G.K.	6 1/2 x 7 1,400	1,450

Eight Cylinders.

RATED H.P.	MAKE.	BORE AND STROKE. R.P.M.	WT.
120	Johnson	5 x 4 1,400	418*

Nine Cylinders.

RATED H.P.	MAKE.	BORE AND STROKE. R.P.M.	WT.
250	Smalley, G.K.	5 1/2 x 5 1/2 1,100	....

Twelve Cylinders.

RATED H.P.	MAKE.	BORE AND STROKE. R.P.M.	WT.
180	Johnson	5 x 4 1,400	595*

Outboard Motors.

RATED H.P.	MAKE.	NO. OF CYLVS.	BORE AND STROKE. R.P.M.	WT.
3	Admiral	1	2 1/2 x 2 1/2 1,200	56
3	Aerothrust	2	2 1/2 x 2 1/2 2,000	59

2	Am. Detroit	1	2 1/2 x 2 1/2	900	50
2	Callie	1	2 1/2 x 2 1/2	800	57
2	Evinrude	1	2 1/2 x 2 1/2	700	50
2	Ferro	1	2 1/2 x 2 1/2	600	95
3	Gray Gearless	1	3 x 2 1/2	1,000	52
2	Roban	2	2 1/2 x 2 1/2	800	...
2	L-A	1	2 1/2 x 2 1/2	600	...
2	Michigan	1	2 1/2 x 2 1/2	900	50
2	Miller	1	2 1/2 x 2 1/2	850	53
1 1/2	Motorgo	1	2 1/2 x 2 1/2	900	68
3	Motorow	1	2 1/2 x 2 1/2	900	51
2	No-Ro	2	2 1/2 x 2 1/2	1,000	50
2	Racine	1	2 1/2 x 2 1/2	800	61
2	Spinaway	1	2 1/2 x 2 1/2	1,000	58
2	Strelinger	1	3 x 2 1/2	900	70
4	Sweet	1	2 1/2 x 3	1,500	...
3	Waterman	1	2 1/2 x 3	900	58
2	Wilco	1	2 1/2 x 3	900	50
2	Wisconsin	1	2 1/2 x 2 1/2	750	55
2	Wright	1	2 1/2 x 3	750	95
2	Wright	1	2 1/2 x 3	...	50

Four Cycle Motors

Heavy Duty

R. P. M. 500 and Less.

For the purpose of this engine directory, heavy-duty motors were considered those whose rated horsepower is developed at 500 R.P.M. or less; medium-duty motors, those having normal speeds between 501 and 800 R.P.M.; and light-weight, high-

speed motors, those having a greater rotative speed than 800 revolutions per minute. Where the manufacturer gave a range in horsepower and revolutions for a particular model, we have chosen the higher value in both cases.

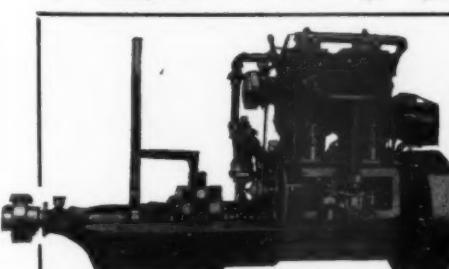
One Cylinder.

RATED H.P.	MAKE.	BORE AND STROKE. R.P.M.	WT.
2 1/2	Nieland	4 x 4 1/2 475	350
3	Automatic	4 1/2 x 5 500	300
3 1/2	Nieland	5 x 6 375	550
4	Atlas	5 x 6 480	720
4	Clay, G.K.	4 1/2 x 5 300	...
4	Evansville	4 1/2 x 5 500	270
4	Frisco Standard	4 1/2 x 5 1/2 420	...
4	Grizzly Bear, G.K.	4 1/2 x 5 240	375
4	Hettinger	5 1/2 x 6 500	550
4	Samson, G.K.C.D.	5 x 6 500	600
4	Vulcan, G.K.	4 1/2 x 6 500	300*
4 1/2	Emery	4 1/2 x 6 500	325
5	Atlas	5 1/2 x 6 450	817
5	Campbell, G.K.	5 x 5 1/2 500	375
5	Carl	5 x 6 400	270
5	Evansville	5 x 6 500	375
5	Frisco Standard	5 1/2 x 6 1/2 400	...
5	Grizzly Bear, G.K.	5 x 6 450	435
5	Holliday	5 x 6 500	500
5	Nieland	6 x 7 350	...
5	Regal, G.K.	5 1/2 x 5 1/2 450	560*
5	Vulcan, G.K.	5 1/2 x 7 500	400*
5	Wolv'rine, G.K.D.A.P.	5 1/2 x 6 500	494
6	Automatic	5 1/2 x 7 400	643
6	Carl	6 x 8 325	325
6	Clay, G.K.	5 1/2 x 7 400	675
6	Miller	5 1/2 x 6 500	450
6	Nieland	6 1/2 x 7 1/2 325	800
6	Samson, G.K.C.D.	5 1/2 x 7 500	650
7	Campbell, G.K.	5 1/2 x 6 1/2 500	425
7	Frisbie, G.K.	6 x 6 450	500

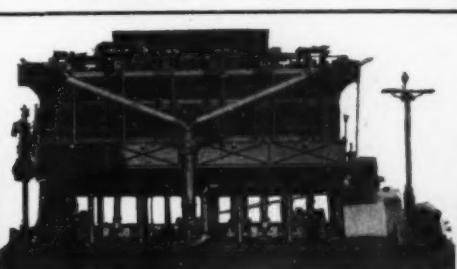
Two Cylinders.

RATED H.P.	MAKE.	BORE AND STROKE. R.P.M.	WT.
4	Carl	4 1/2 x 5 350	220
5	Nieland	4 x 5 475	500
5	Automatic	4 1/2 x 5 500	525
5	Strelinger	5 x 6 375	775
5	Evansville	4 1/2 x 5 500	375
5	Atlas	5 x 6 480	1,150
6	Clay, G.K.	4 1/2 x 5 500	575
6	Frisco Standard	4 1/2 x 5 1/2 440	...
6	Grizzly Bear, G.K.	4 1/2 x 5 1/2 450	625
6	Samson, G.K.C.D.	5 x 6 500	725
7	Campbell, G.K.	5 x 5 1/2 500	450
7	Emery	4 1/2 x 5 500	475
7	Evansville	4 1/2 x 5 500	535
7	Frisco Standard	5 1/2 x 6 400	...

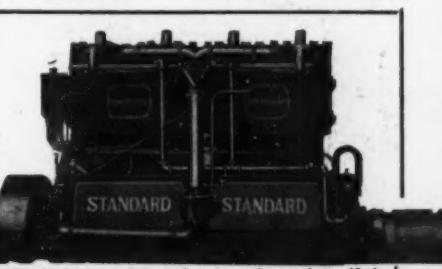
10	Grizzly Bear, G.K.	5 x 6	450	1,100
10	Holliday	5 x 7	500	750
10	Nieland	6 x 7	350	1,180
10	Regal, G.K.	5 1/2 x 5 1/2	450	900
10	Sterling	4 1/2 x 6	500	730
10	Vulcan, G.K.	5 1/2 x 7	500	900
10	Yale	5 1/2 x 6	500	885
10	Murray & Tregurtha	5 x 6	500	700
10	Anderson, G.K.	5 x 6	500	850
10	Atlas	6 x 7	450	1,425
10	Automatic	5 1/2 x 7	400	1,115
10	Blount	5 1/2 x 6 1/2	425	1,100
10	Buffalo, G.K.	5 x 6 1/2	400	1,000
10	Erd, G.K.	5 x 6	500	610
10	Frisco Standard	6 x 2	380	...
10	Fulton, G.K.	5 x 6 1/2	500	850
10	Harris, G.K.	5 1/2 x 6 1/2	500	...
10	Hettinger	5 1/2 x 6	500	800
10	Lamb	5 1/2 x 6	500	825
10	Miller	5 1/2 x 6	500	500
10	Miller (D'ble Opp's'd)	6 1/2 x 7 1/2	325	1,400
10	Nieland	6 1/2 x 7 1/2	500	...
10	Robert's Motor	5 x 6	500	750
10	Samson, G.K.C.D.	5 1/2 x 7	500	840
10	Standard	5 x 6 1/2	450	850
10	Wolverine, G.K.D.A.P.	5 1/2 x 7	500	950
10	Campbell, G.K.	5 1/2 x 6 1/2	500	675
10	Clay, G.K.	5 1/2 x 7	400	1,300
10	Clifton, G.K.	6 1/2 x 7	400	1,300
10	Frisbie, G.K.	6 x 6	450	700
10	Guarantee, G.K.D.	6 x 5	...	...
10	Murray & Tregurtha	5 1/2 x 7	425	1,300
10	Regal, G.K.	6 1/2 x 7	400	1,560
10	Wolverine, G.K.D.A.P.	6 1/2 x 7	400	1,279
10	Buffalo, G.K.	6 x 7 1/2	350	1,400
10	Emery	5 1/2 x 7	400	750
10	Holliday	6 x 7	500	1,150



Fulton two and four-cycle motors, built in 34 sizes, 3 1/2 to 200 h.p.

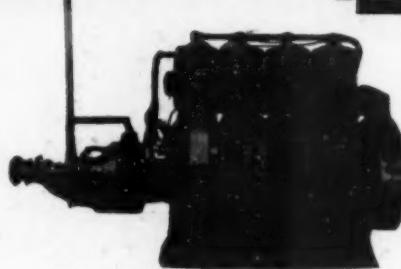


Murray & Tregurtha, two, three, four, five and six cylinders, 4 to 175 h.p.

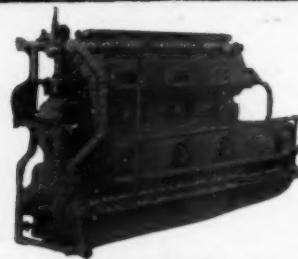


Standard, heavy-duty and auto-marine engines, 10 to 150 h.p., two, three, four and six cylinders.

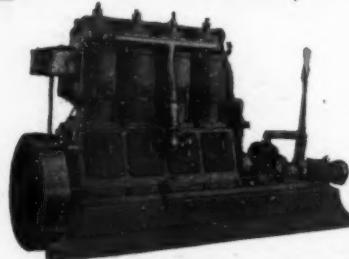
Four-Cycle Motors.



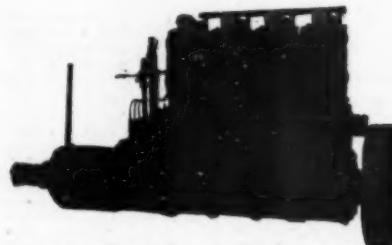
Anderson marine motors, one, two, three, four and six cylinders, 2 1/2 to 150 h.p.



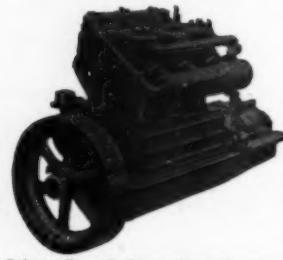
Winton four-cycle marine motors, six cylinders, 7 1/2 to 200 h.p.



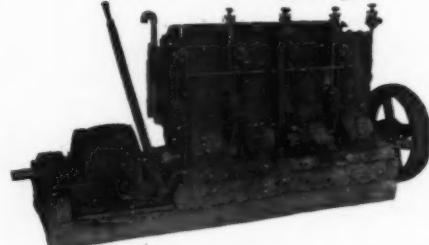
Lawley motors, 20, 40 and 60 h.p., two, four and six cylinders.



Fairbanks-Morse motors, 3 1/2 to 100 h.p. for gasoline, kerosene, distillate and fuel oils, all two-cycle.



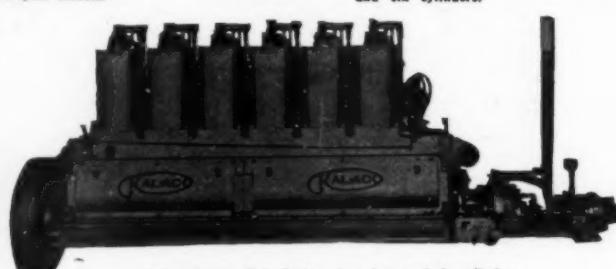
Palmer line of four-cycle motors consists of 15 models, 3 1/2 to 80 h.p., in addition to 17 two-cycle models.



Automatic engines, 3 to 250 h.p., one, two, three, four and six cylinders.



Blount engines, 15 models, 12 to 75 h.p.



Ralco motors, 8 to 80 h.p., two, four and six cylinders.

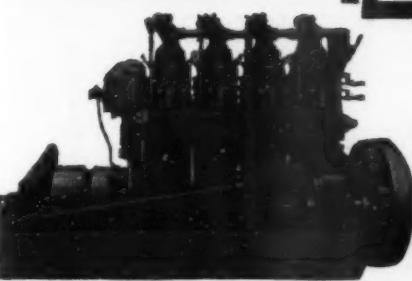
Three Cylinders.

	RATED. H.P.	MAKE.	BORE AND STROKE. R.P.M.	WT.					
15	Blount	5 x 7	500	1,300	60	Mason-Jäger, G.K.	8 3/4 x 12	400	4,300
15	Sterling	5 1/2 x 7	500	975	60	Troyer Fox, G.D.B.	9 3/4 x 11 1/2	320	7,500
15	Vulcan, G.K.	6 1/4 x 7 1/2	475	1,300	60	Wolverine, G.K.D.A.P.	9 3/4 x 12	300	6,377
16	Atlas	6 1/2 x 7 1/2	425	2,475	65	Clifton, G.K.	8 3/4 x 11	400	4,500
16	Doman, G.K.	6 x 8	400	1,485	65	Anderson, G.K.	9 3/4 x 11	400	4,300
16	Evansville	6 x 6 1/2	500	900	75	Automatic	10 x 14	275	8,000
16	Frisco Standard	6 1/4 x 7 1/2	360	.....	75	Fulton, G.K.	9 3/4 x 11	400	4,300
16	Guarantee, G.K.D.	6 x 7	.....	.....	75	Hitchcock, G.K.	10 x 14	275	14,000
16	Harris, G.K.	6 x 7	450	.....	75	Samson, G.K.C.D.	11 x 12	275	10,500
16	Hitchcock, G.K.	6 x 7 1/2	475	1,100	75	Yale	10 1/2 x 12	300	11,400
16	Mianus, G.K.	6 x 8	400	1,600	80	Atlas	10 1/2 x 12	300	10,500
16	Miller	6 x 7	450	900	80	Frisco Standard	9 3/4 x 12	280	.....
16	Miller (Dble Opp's'd)	6 x 6	450	730	84	Monarch, G.K.	10 x 10	450	6,100*
16	Palmer	6 1/4 x 8	400	1,000	85	Wolverine, G.K.D.A.P.	11 x 12	300	6,747
16	Samson, G.K.C.D.	6 x 8	500	1,000	85	Automatic	10 1/2 x 15	250	12,000
16	Stork	6 x 7	450	1,250	85	Niseco (Diesel), F.	9 x 12 1/2	350	10,000
16	Twentieth Cen., G.K.	5 3/4 x 7 1/2	400	1,150	90	Atlas	12 x 12	300	11,250
18	Carl	6 x 8	300	590	100	Samson, G.K.C.D.	12 x 14	275	15,000
18	Clay, G.K.	6 1/2 x 7	400	1,525	100	Yale	12 x 16	250	19,000
18	Hettinger	6 1/2 x 8	400	1,450	100	Atlas	12 x 16	250	17,500
18	Kuhner, G.K.	6 x 7	500	775*	110	Frisco Standard	11 1/4 x 15	250	.....
18	Monarch, G.K.	8 x 9	500	.....	110	Wolverine, G.K.D.A.P.	12 1/2 x 14	300	10,117
18	Murray & Tregurtha	6 1/2 x 8	425	1,600	125	Atlas	13 x 16	250	.....
18	Standard	6 x 8	400	1,800	125	Samson, G.K.C.D.	14 1/2 x 17	225	25,000
18	Strelinger	6 x 6	500	1,265	150				
20	Atlas	7 1/2 x 8 1/2	350	3,070	24				
20	Campbell	6 1/2 x 7 1/2	500	1,475	24				
20	Doman, G.K.	7 x 9	350	1,849	24				
20	Frisco Standard	7 1/4 x 9	340	.....	24				
20	Knox	7 x 8	450	3,400	25				
20	Lawley, G.K.	6 1/2 x 9	356	1,800	25				
20	Mason-Jäger, G.K.	6 1/2 x 8	450	1,700	25				
20	Miller (Dble Opp's'd)	7 x 7	400	950	25				
20	Nieland	7 1/2 x 9	300	2,000	27				
20	Robert's Motor	6 x 8	500	1,080	27				
20	Troyer Fox, G.D.B.	7 1/4 x 9	375	2,680	28				
20	Twentieth Cen., G.K.	6 1/2 x 8 1/2	350	1,600	30				
20	Yale	7 x 9	350	3,000	30				
22	Buffalo, G.K.	7 x 9	350	2,100	30				
22	Clay, G.K.	7 1/2 x 7 1/2	400	1,750	30				
22	Harris, G.K.	6 1/2 x 8 1/2	450	.....	30				
22	Vulcan, G.K.	7 1/2 x 8 1/2	425	2,200	30				
24	T. & M., G.K.	7 x 8	450	1,800	30				
25	Anderson, G.K.	7 x 8 1/2	450	1,200	32				
25	Automatic	7 1/2 x 9	375	2,625	32				
25	Fulton, G.K.	7 x 8 1/2	450	1,200	32				
25	Hitchcock, G.K.	7 1/2 x 9	400	3,100	35				
25	Palmer	7 1/2 x 10	400	3,000	35				
25	Ralco	7 x 9	375	3,300	35				
25	Stork	7 1/2 x 9	400	2,250	36				
27	Atlas	8 1/2 x 10	325	4,105	37 1/2				
28	Clay, G.K.	7 1/2 x 9	375	2,650	37 1/2				
28	Monarch, G.K.	10 x 10	375	4,300*	38				
30	Frisco Standard	8 1/4 x 10 1/2	300	.....	38				
30	Harris, G.K.	7 1/2 x 9 1/2	450	.....	40				
30	Twentieth Cen., G.K.	8 x 10	350	1,800	40				
32	Hall, G.K.	7 1/2 x 10 or 11	400	2,800	40				
32	Harris, G.K.	8 x 10	400	.....	42				
32	Scripps, G.K.	7 1/2 x 9	450	2,100	45				
35	Clay, G.K.	7 1/2 x 9	375	2,800	45				
40	Atlas	9 1/2 x 11	300	5,175	45				
40	Hitchcock, G.K.	9 x 11 1/2	330	4,900	50				
40	Mason-Jäger, G.K.	8 1/4 x 12	300	3,200	50				
42	Clay, G.K.	8 1/4 x 10 1/2	375	3,000	60				
50	Anderson, G.K.	9 1/2 x 11	400	3,250	50				
50	Atlas	10 1/2 x 12	300	7,750	54				
50	Fulton, G.K.	9 1/2 x 11	400	3,250	55				
50	Niseco (Diesel), F.	9 x 12 1/2	350	7,500	56				
55	Atlas	12 x 12	280	8,500	60				

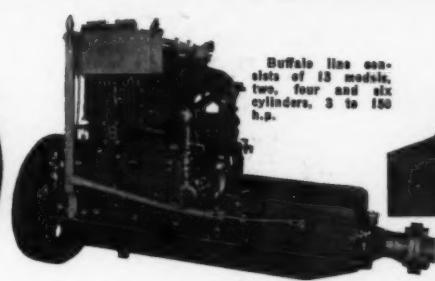
Four Cylinders.

	RATED. H.P.	MAKE.	BORE AND STROKE. R.P.M.	WT.
60	Ferro, G.K.	3 1/2 x 5	500	.....
60	Evansville	4 1/2 x 6	500	610
60	Ferro, G.K.	4 x 6	500	.....
60	Frisbie, G.K.	4 1/2 x 5 1/2	450	1,400
60	Frisco Standard	6 1/4 x 7	450	1,400
60	Palmer	6 1/4 x 8	400	2,000
60	Standard	6 1/4 x 7	350	2,500
60	Troyer Fox, G.D.B.	7 1/2 x 9	3,490	24
60	Wolverine, G.K.D.A.P.	7 1/2 x 9	3,490	24
60	Blount	7 x 9	3,504	24
60	Buffalo, G.K.	7 1/2 x 10	3,500	24
60	Erd, G.K.	7 x 9	3,500	24
60	Fulton, G.K.	7 1/2 x 9	3,500	24
60	Hitchcock, G.K.	7 1/2 x 9	3,445	25
60	Robert's Motor	7 1/2 x 9	3,445	25
60	Standard	7 1/2 x 9	3,445	25
60	Yale	7 x 9	3,400	24
60	Clifton, G.K.	7 1/2 x 9	3,400	24
60	Regal, G.K.	7 1/2 x 9	3,400	24
60	Imperial	7 1/2 x 9	3,400	24
60	Holliday	7 x 9	3,400	24
60	Vulcan, G.K.	7 1/2 x 9	3,200	24
60	Lamb	7 1/2 x 9	3,200	24
60	Miller	7 1/2 x 9	3,200	24
60	Regal, G.K.	7 1/2 x 9	3,200	24
60	Standard	7 1/2 x 9	3,200	24
60	Blount	7 1/2 x 9	3,200	24
60	Buffalo, G.K.	7 1/2 x 9	3,200	24
60	Harris, G.K.	7 1/2 x 9	3,200	24
60	Fulton, G.K.	7 1/2 x 9	3,200	24
60	Hitchcock, G.K.	7 1/2 x 9	3,200	24
60	Robert's Motor	7 1/2 x 9	3,200	24
60	Standard	7 1/2 x 9	3,200	24
60	Yale	7 1/2 x 9	3,200	24
60	Clifton, G.K.	7 1/2 x 9	3,200	24
60	Regal, G.K.	7 1/2 x 9	3,200	24
60	Standard	7 1/2 x 9	3,200	24
60	Blount	7 1/2 x 9	3,200	24
60	Buffalo, G.K.	7 1/2 x 9	3,200	24
60	Harris, G.K.	7 1/2 x 9	3,200	24
60	Fulton, G.K.	7 1/2 x 9	3,200	24
60	Hitchcock, G.K.	7 1/2 x 9	3,200	24
60	Robert's Motor	7 1/2 x 9	3,200	24
60	Standard	7 1/2 x 9	3,200	24
60	Blount	7 1/2 x 9	3,200	24
60	Buffalo, G.K.	7 1/2 x 9	3,200	24
60	Harris, G.K.	7 1/2 x 9	3,200	24
60	Fulton, G.K.	7 1/2 x 9	3,200	24
60	Hitchcock, G.K.	7 1/2 x 9	3,200	24
60	Robert's Motor	7 1/2 x 9	3,200	24
60	Standard	7 1/2 x 9	3,200	24
60	Blount	7 1/2 x 9	3,200	24
60	Buffalo, G.K.	7 1/2 x 9	3,200	24
60	Harris, G.K.	7 1/2 x 9	3,200	24
60	Fulton, G.K.	7 1/2 x 9	3,200	24
60	Hitchcock, G.K.	7 1/2 x 9	3,200	24
60	Robert's Motor	7 1/2 x 9	3,200	24
60	Standard	7 1/2 x 9	3,200	24
60	Blount	7 1/2 x 9	3,200	24
60	Buffalo, G.K.	7 1/2 x 9	3,200	24
60	Harris, G.K.	7 1/2 x 9	3,200	24
60	Fulton, G.K.	7 1/2 x 9	3,200	24
60	Hitchcock, G.K.	7 1/2 x 9	3,200	24
60	Robert's Motor	7 1/2 x 9	3,200	24
60	Standard</td			

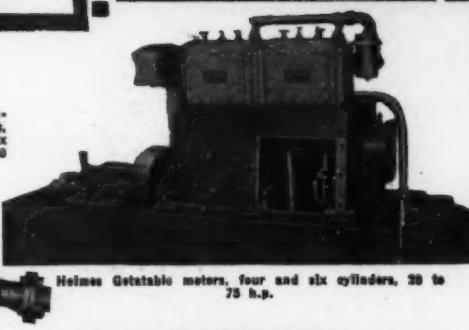
Four-Cycle Motors.



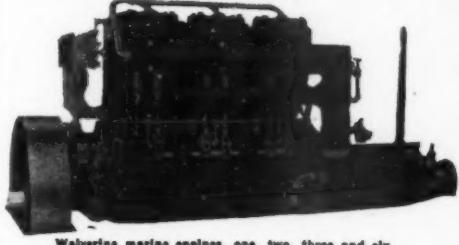
Lamb and Lambkin motors, two, four and six cylinders, 12 to 60 h.p.



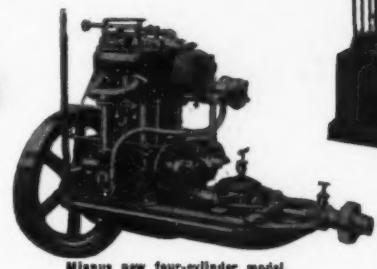
Buffalo line consists of 18 models, two, four and six cylinders, 3 to 150 h.p.



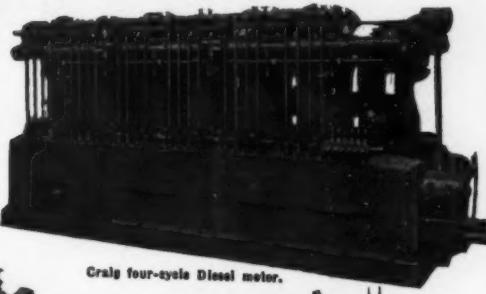
Holmes Getablete motors, four and six cylinders, 20 to 75 h.p.



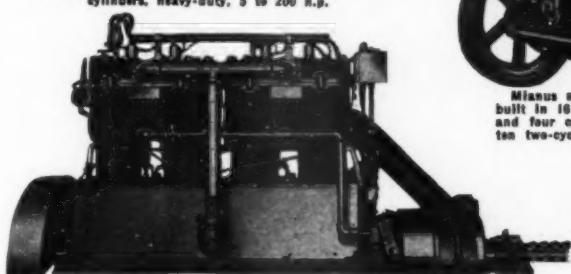
Wolverine marine engines, one, two, three and six cylinders, heavy-duty, 5 to 200 h.p.



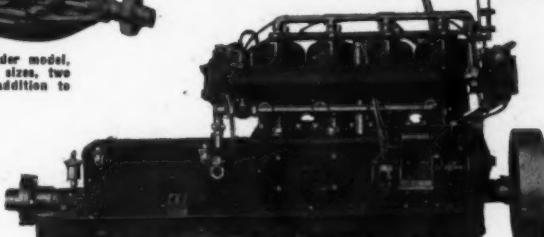
Mianus new four-cylinder model, built in 16 and 32 h.p. sizes, two and four cylinders, in addition to ten two-cycle models.



Craig four-cycle Diesel motor.



Twentieth Century engines, two, three, four and six cylinders, 12 to 100 h.p.



Doman engines, 6 to 75 h.p., two, three, four and six cylinders.

35	Kuhner, G.K.	6 x 7	500	1,250	90	Murray & Tregurtha	9 x 12	325	6,000	40	Fulton, G.K.	5 x 6	500	1,950
35	Miller	6 x 8	350	1,900	100	Anderson, G.K.	9 1/4 x 11	400	5,350	40	Lamb	5 1/4 x 6	500	1,650
35	Sterling	5 1/4 x 8	500	1,600	100	Automatic	10 x 14	275	11,780	40	Stork	5 1/4 x 7	450	3,300
35	Hettinger	6 1/4 x 8	350	2,800	100	Buffalo, G.K.	10 x 12	300	8,200	42	Campbell, G.K.	5 1/4 x 6 1/2	500	1,650
36	Red Wing	6 x 8 1/2	500	1,300	100	Craig	9 x 10	400	4,500	45	Ralaco	5 x 7	500	2,700
37	Standard	6 x 8	400	2,800	100	Fulton, G.K.	9 1/4 x 11	400	5,350	45	Twentieth Cen., G.K.	5 1/4 x 7 1/2	500	2,450
38	Blount	5 1/4 x 8	425	1,700	100	Hitchcock, G.K.	10 x 14	275	17,000	48	Doman, G.K.	6 x 8	400	3,273
40	Atlas	6 1/4 x 7 1/2	500	3,450	110	Atlas	10 1/2 x 12	300	13,000	54	Standard	6 x 8	400	3,200
40	Campbell, G.K.	6 1/4 x 7 1/2	500	1,750	110	Murray & Tregurtha	10 x 12	325	6,800	60	Campbell, G.K.	6 1/2 x 7 1/2	500	2,375
40	Doman, G.K.	7 x 9	350	2,887	112	Monarch, G.K.	10 x 10	450	7,030	60	Doman, G.K.	7 x 9	350	3,950
40	Ithaca	6 x 8	450	1,700	120	Automatic	10 1/2 x 15	250	17,000	60	Lamb	6 1/4 x 7	450	2,000
40	Knox	7 x 8	450	3,400	120	Craig (Diesel), F.	9 1/2 x 12	400	.....	60	Lawley, G.K.	6 1/2 x 10	400	3,800
40	Lamb	6 1/4 x 7	450	2,150	120	Niseco (Diesel), F.	9 x 12 1/2	350	13,000	60	Loew-Victor	6 x 10	400	4,600
40	Lawley, G.K.	6 1/4 x 9	380	2,600	125	Atlas	12 x 12	300	13,900	60	Mason-Jäger, G.K.	6 1/4 x 8	450	3,200
40	Loew-Victor	6 x 10	400	3,500	125	Harris, G.K.	11 x 13	300	.....	60	Missouri	6 x 8	400	3,000
40	Mason Jäger, G.K.	6 1/4 x 8	450	2,000	133	Yale	12 x 16	250	24,000	60	Murray & Tregurtha	6 1/4 x 8	450	3,000
40	Miller	7 x 7	450	2,400	140	Atlas	12 x 16	250	19,000	60	Twentyith Cen., G.K.	6 1/4 x 8 1/2	450	3,700
40	Missouri	6 x 8	400	2,500	140	Harris, G.K.	11 x 15	300	.....	65	Buffalo, G.K.	7 x 9	350	4,850
40	Murray & Tregurtha	6 1/4 x 8	400	2,500	160	Atlas	13 x 16	250	21,000	70	Robert's Motor	7 x 9	450	3,400
40	Robert's Motor	6 x 8	500	1,640	200	Atlas	14 x 16	225	26,000	70	Sterling	6 1/4 x 9	400	3,600
40	Stork	6 1/4 x 8	400	3,600	200	Craig	11 x 12	400	7,000	70	Vulcan, G.K.	7 1/2 x 8 1/2	425	4,500
40	Strelinger	6 x 6	500	1,950	240	Niseco (Diesel), F.	13 x 18	240	32,000	70	Fulton, G.K.	7 x 8 1/2	450	3,150
45	Buffalo, G.K.	7 x 9	350	3,400	75	Harris, G.K.	12 x 16	250	19,000	75	Harris, G.K.	6 1/4 x 8 1/2	450	.....
45	Regal, G.K.	7 1/2 x 9	400	4,600	75	Atlas	12 x 16	250	19,000	75	Holmes	6 x 9	500	3,500
45	Sterling	6 1/2 x 9	400	2,870	75	Westman	6 1/4 x 7	500	.....	75	Stork	7 1/2 x 9	400	6,000
45	Vulcan, G.K.	7 1/2 x 8 1/2	425	3,400	75	Ralaco	6 1/4 x 7	500	.....	75	Lawley, G.K.	7 x 9	375	6,600
48	T. & M., G.K.	7 x 8	450	3,200	95	Murray & Tregurtha	8 1/2 x 11	325	5,200	90	Niseco (Diesel), F.	7 x 9 1/2	450	9,000
50	Anderson, G.K.	7 x 8 1/2	450	2,200	100	Hitchcock, G.K.	9 x 12	330	8,800	96	Scripps, G.K.	7 1/2 x 9	450	5,100
50	Automatic	7 1/2 x 9	375	4,430	100					100	Fulton (Diesel) F.	8 x 9	400	9,000
50	Fulton, G.K.	7 x 8 1/2	450	2,200	100					100	Hall, G.K.	7 1/2 x 11	400	6,400
50	Harris, G.K.	6 1/4 x 8 1/2	500	.....	100					100	Murray & Tregurtha	7 1/2 x 10	400	.....
50	Hitchcock, G.K.	7 1/2 x 10	375	5,400	100					100	Standard	8 x 10	400	8,000
50	Hollard	7 x 9	400	3,250	100					100	Twentyith Cen., G.K.	8 x 10	425	5,500
50	Holmes	6 x 9	500	2,500	100					100	Robert's Motor	8 x 10 1/2	400	7,000
50	Palmer	7 1/2 x 10	400	4,200	100					100	Monarch, G.K.	8 x 9	500	5,800
50	Ralaco	7 x 9	375	4,800	100					120	Mason-Jäger, G.K.	8 1/4 x 12	400	7,200
50	Stork	7 1/2 x 9	400	4,300	100					125	Brennan, G.K.	7 x 8	500	2,500
50	Twentieth Cen., G.K.	6 1/2 x 8 1/2	400	2,600	100					125	Murray & Tregurtha	8 1/2 x 11	325	6,200
50	Westman	6 1/2 x 9	500	.....	100					125	Winton	8 x 11	500	10,000
53	Yale	7 1/2 x 9	400	7,200	100					125	Anderson, G.K.	9 1/4 x 11	400	7,500
55	Atlas	8 x 10	375	5,950	100					125	Automatic	10 x 14	275	15,100
55	Harris, G.K.	7 1/2 x 9 1/2	400	.....	100					125	Buffalo, G.K.	10 x 12	300	12,800
55	Robert's Motor	7 x 9	450	2,800	100					125	Craig	9 x 10	400	5,500
55	Clay, G.K.	7 1/2 x 9	450	3,600	100					125	Fulton, G.K.	9 1/4 x 11	400	8,000
56	Craig	6 1/2 x 9	375	3,600	100					125	Standard	8 1/2 x 11	400	5,800
60	Hettlinger	8 1/2 x 10	300	4,500	100					125	Monarch	10 x 10	450	10,100
60	Miller	7 x 10	350	3,600	100					125	Murray & Tregurtha	10 x 12	345	11,000
60	Murray & Tregurtha	7 1/2 x 10	375	4,000	100					125	Craig (Diesel), F.	9 1/2 x 12	400	.....
60	Niseco (Diesel), F.	7 x 9 1/2	450	6,500	100					125	Niseco (Diesel), F.	9 x 12 1/2	350	18,000
60	Oxford	6 x 9 1/2	500	1,500	100					125	Automatic	12 x 16	225	2,400
64	Scripps, G.K.	7 1/2 x 9	450	3,700	100					125	Winton	9 x 14	450	15,000
65	Hall, G.K.	7 1/2 x 10	400	4,600	100					125	Automatic	13 1/2 x 18	225	26,000
65	Harris, G.K.	7 x 10	400	.....	100					125	Speedway	11 x 12	450	11,400
65	Troyer Fox, G.D.B.	8 1/2 x 10 1/2	325	7,100	100					125	Craig	11 x 12	400	10,000
70	Craig, G.K.	8 1/2 x 10 1/2	375	4,000	100					125	Niseco (Diesel), F.	13 x 18	240	45,000
70	Fulton (Diesel) F.	9 x 9	400	6,500	100									
72	March, G.K.	8 x 9	500	4,300	100									
75	Robert's Motor	8 x 10 1/2	400	4,300	100									
75	Standard	8 x 10	400	5,300	100									
75	Twentieth Cen., G.K.	8 x 10	350	3,700	100									
75	Vulcan, G.K.	8 1/2 x 10 1/2	400	5,500	100									
80	Atlas	9 x 10 1/2	350	8,000	100									
80	Hitchcock, G.K.	9 x 12	350	7,500	100									
80	Mason-Jäger, G.K.	8 1/2 x 12	400	5,200	100									
80	Murray & Tregurtha	8 1/2 x 11 1/2	350	5,000	100									
80	Troyer Fox, G.D.B.	9 1/2 x 11 1/2	320	8,600	100									
90	Clifton, G.K.	8 1/2 x 11	400	5,400	100									



Miller, 2-cycle outboard motor. The Miller, 4-cycle line consists of 8 medium-duty models, 3 heavy-duty models, 2 semi-speed and 5 open-speed motors, ranging in horsepower from 4 to 60.

RATED H.P.	MAKE.	BORE AND STROKE.	R.P.M.	WT.
100	Sterling	6 1/4 x 8	400	4,900
160	Mason-Jäger, G.K.	8 1/4 x 12	400	8,250

Medium Duty

R. P. M. 501-800

FOUR-CYCLE

One Cylinder.

RATED H.P.	MAKE	BORE AND STROKE.	R.P.M.	WT.
1 1/2	Nieland	3 x 3 1/2	800	95
2	Nieland	3 1/2 x 4	700	115
2 1/2	Anderson, G.K.	4 x 4	600	250
3	Holliday	3 1/2 x 5	600	275
3	Alexander & Cox	4 x 5	600	262*
3	Honest Injun	3 x 3	800	60*
3	Regal, G.K.	4 x 4 1/2	650	250*
3 1/2	Missouri	4 x 5	600	150*
4	Palmer	4 1/2 x 5	600	350
4	Anderson, G.K.	4 1/2 x 5	550	375
4	Buffalo, G.K.	3 x 4	700	240
4	Guarantee, G.K.D.	4 1/2 x 4 1/2	...	450
4	Kuhner	4 1/2 x 5	600	300*
4	Miller	4 1/2 x 5	600	350
4	Missouri	4 1/2 x 5	600	225
4	Portage	4 1/2 x 5	600	300
4	Regal, G.K.	4 1/2 x 5	650	325*
4	Schaefer	4 x 6	525	200
4	Frisbie, G.K.	4 1/2 x 5	550	325
4	Gilmore, G.K.	4 1/2 x 5	650	190
4	Honest Injun	4 x 4	800	95*
4	Lisk, G.K.	4 1/2 x 5	600	225
4	Palmer	5 x 6	600	400
4	Buffalo, G.K.	3 1/2 x 5	600	400
4	Hall, G.K.	5 x 6	634	625
4	Harris, G.K.	3 1/2 x 6 1/2	550	...
4	Loew-Victor	4 1/2 x 5 1/2	600	472
4	Miller	(double opposed)	4 1/2 x 4	600
4	Portage	5 x 5 1/2	575	400
4	Scripps, G.K.	4 1/2 x 5	600	335
4	Strelinger	4 1/2 x 6	600	330*
4	Westman	4 1/2 x 5 1/2	600	...
4	Honest Injun	5 x 6	700	175
4	Kuhner, G.K.	5 x 6	650	350*
4	Monarch, G.K.	5 x 6	725	505*
4	Schaefer	5 x 5	600	850
4	Miller	(double opposed)	4 1/2 x 5	550
4	Westman	4 1/2 x 5 1/2	600	350
4	Honest Injun	6 x 7	550	775*
4	Scripps, G.K.	5 1/2 x 6	700	500
4	Monarch, G.K.	6 x 7	525	580*
4	Strang, K.	6 1/2 x 7	650	800

Two Cylinders.

RATED H.P.	MAKE	BORE AND STROKE.	R.P.M.	WT.
4	Murray & Tregurtha	3 1/2 x 4	550	400
4	Nieland	3 1/2 x 4	700	375

RATED H.P.	MAKE	BORE AND STROKE.	R.P.M.	WT.
4	Stork	5 x 6	850	850
4	Anderson, G.K.	4 x 4	800	350
4	Gilmore, G.K.	3 1/2 x 3 1/2	750	160
4	Holliday	4 x 5	600	450
4	Missouri	4 x 5	600	557
4	Murray & Tregurtha	4 1/2 x 5	350	250*
4	Regal, G.K.	4 x 4 1/2	650	450
4	Palmer	4 1/2 x 5	600	500
4	Anderson, G.K.	4 1/2 x 5	550	550
4	Guarantee, G.K.D.	4 1/2 x 4 1/2	...	400*
4	Kuhner, G.K.	4 1/2 x 5	600	500
4	Miller	4 1/2 x 5	600	375
4	Missouri	4 1/2 x 5	600	400
4	Portage	4 1/2 x 5	600	425
4	Red Wing	4 1/2 x 5	600	685
4	Regal, G.K.	4 1/2 x 5	650	685
4	Schaefer	4 x 4 1/2	525	475
4	Vulcan, G.K.	4 1/2 x 5	650	650
4	Hettlinger	4 1/2 x 6	550	600
4	Brennan, G.K.	4 1/2 x 6	600	400
4	Carl, G.K.	5 x 5	800	445*
4	Doman, G.K.	5 x 6	535	744
4	Frisbie, G.K.	4 1/2 x 5	550	430
4	Gilmore, G.K.	4 1/2 x 5	650	280
4	Honest Injun	5 x 3 1/2	550	...
4	Harris, G.K.	4 x 4	750	240
4	Honest Injun	4 1/2 x 6	650	700
4	Mason-Jäger, G. K.	4 1/2 x 6	650	1,000*
4	Monarch, G.K.	5 x 6	725	...
4	Palmer	5 x 6	600	750
4	Ralco	4 x 6	600	860
4	Westman	4 1/2 x 5 1/2	600	...
4	Alexander & Cox	5 1/2 x 6	500	445*
4	Aristox	4 1/2 x 4 1/2	650	700
4	Lisk, G.K.	4 1/2 x 5	600	450
4	Loew-Victor	4 1/2 x 5 1/2	600	626
4	Missouri	5 x 6	600	650
4	Portage	5 x 5 1/2	575	545
4	Red Wing	5 x 6	600	550
4	Speedway	4 1/2 x 5	800	700
4	Westman	4 1/2 x 5 1/2	600	...
4	Alexander & Cox	5 1/2 x 6	500	445*
4	Aristox	4 1/2 x 4 1/2	650	700
4	Lisk, G.K.	4 1/2 x 5	600	450
4	Loew-Victor	4 1/2 x 5 1/2	600	626
4	Missouri	5 x 6	600	650
4	Portage	5 x 5 1/2	575	545
4	Red Wing	5 x 6	600	550
4	Speedway	4 1/2 x 5	800	700
4	Scripps, G.K.	4 1/2 x 5	800	395
4	Brennan, G.K.	5 x 5	600	500
4	Carl	5 x 6	650	525
4	Mason-Jäger, G. K.	5 1/2 x 6	650	800
4	Westman	5 1/2 x 6	600	...
4	Dice, G. K.	(double opposed)	5 1/2 x 5	800
4	Honest Injun	5 x 5	700	325
4	Mercury, G.K.	5 1/2 x 6	650	750
4	Strang, K.	5 1/2 x 7	650	1,100
4	Van Blerck	5 x 6	650	804
4	Hall, G.K.	5 1/2 x 6 1/2	600	900
4	Schaefer	5 x 5 1/2	525	595
5	Westman	5 1/2 x 6 1/2	600	...
5	Blount	5 1/2 x 6	700	768
5	Scripps, G.K.	5 1/2 x 6 1/2	600	1,100
5	Aristox	4 1/2 x 4 1/2	650	950
5	Hall, G.K.	5 x 6	725	1,000*
5	Monarch, G.K.	6 x 7	725	1,250
5	Strang, K.	5 1/2 x 6	650	805
5	Van Blerck	6 1/2 x 8	550	1,250*
5	Dice (double opposed)	6 1/2 x 8	600	1,250*
5	Parsons, G.K.	6 1/2 x 8	600	1,250*

Three Cylinders.

RATED H.P.	MAKE	BORE AND STROKE.	R.P.M.	WT.
6	Nieland	3 1/2 x 4	700	450
6	Doman, G. K.	4 x 5	600	684
6	Palmer	4 1/2 x 5	600	700
6	Portage	4 1/2 x 5	600	500
6	Doman, G. K.	5 x 6	535	972
6	Gilmore, G.K.	4 1/2 x 5	650	380
6	Palmer	5 x 6	600	1,000
6	Honest Injun	4 x 4	800	325
6	Frisbie	4 1/2 x 5	600	650
6	Lisk, G.K.	4 1/2 x 5	700	550
6	Loew-Victor	4 1/2 x 5	600	716
6	Portage	5 x 5 1/2	575	675
6	Speedway	4 1/2 x 5	800	910
6	Monarch, G.K.	5 x 6	725	1,240*
6	Honest Injun	5 x 5	700	450
6	Monarch, G.K.	6 x 7	725	1,240*
6	Strang, K.	6 1/2 x 7	650	1,800
6	Parsons, G.K.	6 1/2 x 8	600	3,030

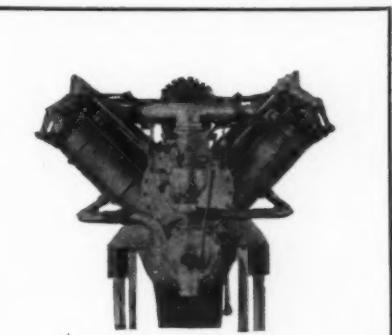
Four Cylinders.

RATED H.P.	MAKE	BORE AND STROKE.	R.P.M.	WT.
9	Carl	4 1/2 x 5	750	340
9	Gilmore, G.K.	3 x 3 1/2	750	255
9	Alexander & Cox	4 x 5	600	595*
9	Doman, G. K.	4 x 5	600	824
9	Murray & Tregurtha	4 1/2 x 5	550	900
9	Regal, G.K.	4 x 4 1/2	650	650
9	Guarantee, G.K.D.	3 1/2 x 4	...	400
9	Palmer	4 1/2 x 4 1/2	600	850
9	Cady	3 1/2 x 4	800	325
9	Miller	4 1/2 x 5	600	800
9	Portage	4 1/2 x 4 1/2	600	650
12	Frisbie	4 1/2 x 5	600	...
12	Lisk, G.K.	4 1/2 x 5	600	...
12	Loew-Victor	4 1/2 x 5	600	...
12	Missouri	5 x 6	600	...
12	Portage	5 x 5 1/2	575	...
12	Red Wing	5 x 6	600	...
12	Speedway	4 1/2 x 5	800	...
12	Westman	4 1/2 x 5 1/2	600	...
12	Alexander & Cox	5 1/2 x 6	500	...
12	Aristox	4 1/2 x 4 1/2	650	...
12	Lisk, G.K.	4 1/2 x 5	600	...
12	Loew-Victor	4 1/2 x 5	600	...
12	Missouri	5 x 6	600	...
12	Portage	5 x 5 1/2	575	...
12	Red Wing	5 x 6	600	...
12	Speedway	4 1/2 x 5	800	...
12	Westman	4 1/2 x 5 1/2	600	...
12	Alexander & Cox	5 1/2 x 6	500	...
12	Aristox	4 1/2 x 4 1/2	650	...
12	Lisk, G.K.	4 1/2 x 5	600	...
12	Loew-Victor	4 1/2 x 5	600	...
12	Missouri	5 x 6	600	...
12	Portage	5 x 5 1/2	575	...
12	Red Wing	5 x 6	600	...
12	Speedway	4 1/2 x 5	800	...
12	Westman	4 1/2 x 5 1/2	600	...
12	Alexander & Cox	5 1/2 x 6	500	...
12	Aristox	4 1/2 x 4 1/2	650	...
12	Lisk, G.K.	4 1/2 x 5	600	...
12	Loew-Victor	4 1/2 x 5	600	...
12	Missouri	5 x 6	600	...
12	Portage	5 x 5 1/2	575	...
12	Red Wing	5 x 6	600	...
12	Speedway	4 1/2 x 5	800	...
12	Westman	4 1/2 x 5 1/2	600	...
12	Alexander & Cox	5 1/2 x 6	500	...
12	Aristox	4 1/2 x 4 1/2	650	...
12	Lisk, G.K.	4 1/2 x 5	600	...
12	Loew-Victor	4 1/2 x 5	600	...
12	Missouri	5 x 6	600	...
12	Portage	5 x 5 1/2	575	...
12	Red Wing	5 x 6	600	...
12	Speedway	4 1/2 x 5	800	...
12	Westman	4 1/2 x 5 1/2	600	...
12	Alexander &			

Four-Cycle Motors.

16	Red Wing	4 1/2 x 5	600	800	40	Honest Injun	5 x 5	700	550	30
16	Regal, G.K.	4 1/2 x 4 1/2	650	950	40	Mercury, G.K.	5 1/2 x 6 1/2	650	1,300	30
16	Vulcan, G.K.	4 1/2 x 5	550	900	40	Monarch, G.K.	6 x 7	725	1,050*	30
18	Hettinger	4 1/2 x 6	700	900	40	Strang	5 1/2 x 7	650	2,500	30
18	Missouri	4 1/2 x 6	600	750	40	Van Blerck	5 1/2 x 6	650	1,040	36
20	Brennan, G.K.	4 x 5	700	550	40	Vulcan, G.K.	5 1/2 x 7	550	1,750	36
20	Domian, G.K.	5 x 6	535	1,140	42	Blount	5 1/2 x 6 1/2	750	1,200	38
20	Gilmore, G.K.	4 1/2 x 5	650	465	45	Lisk, G.K.	5 x 7	700	1,000	39
20	Mason-Jäger, G.K.	4 9/16 x 5	650	1,200	48	Speedway	6 x 8	800	1,700	40
20	Palmer	5 x 6	600	1,250	50	Aristox	5 1/2 x 8	600	1,500	40
20	Ralaco	4 x 5	600	1,275	50	Blount	5 1/2 x 6	600	1,700	45
20	Sterling	4 1/2 x 6 1/2	600	840	50	Brennan, G.K.	5 1/2 x 6	700	1,100	45
20	Stork	5 x 6	650	1,000	50	Schaefer	5 1/2 x 6	525	980	45
20	Westman	4 1/2 x 5 1/2	600	100	50	Brennan, G.K.	5 x 6	700	1,200	45
22	Guarantee, G.K.D.	4 1/2 x 5 1/2	...	900	60	Mercury, G.K.	6 1/2 x 7	650	1,900	45
24	Alexander & Cox	5 1/2 x 6	600	1,200*	60	Parsons, G.K.	6 1/2 x 8	600	3,750	45
24	Emery	4 1/2 x 5	600	650	65	Speedway	6 1/2 x 8	650	2,250	45
24	Loew-Victor	4 1/2 x 5 1/2	600	996	65	Wisconsin Consistent	5 1/2 x 7	800	950	48
24	Missouri	5 x 6	600	950	75	Campbell	6 1/2 x 6 1/2	800	1,000	50
24	Murray & Tregurtha	5 x 6	650	1,000	75	Craig	6 1/2 x 7 1/2	800	1,500	50
24	Portage	5 x 6	575	800	100	Emerson	7 x 7	800	1,600	50
24	Red Wing	5 x 6	600	1,100						
24	Aristox	4 1/2 x 4 1/2	650	1,000						
25	Holmes	4 1/2 x 6 1/2	700	1,000						
25	Ithaca	4 1/2 x 5 1/2	800	1,550						
26	Lisk, G.K.	4 1/2 x 5	800	650						
26	Scripps, G.K.	4 1/2 x 5	800	735						
28	Mercury	5 1/2 x 6	650	1,100						
28	Westman	5 1/2 x 6 1/2	600	100						
30	Brennan, G.K.	4 1/2 x 6	700	200						
30	Carl	5 x 6	750	625						
30	Dice, G.K.	(double opposed)	5 1/2 x 6	800	800					
30	Domian, G.K.	6 x 6	525	1,537						
30	Frisbie, G.K.	4 1/2 x 6	800	745						
30	Lamb	5 1/2 x 6 1/2	550	1,490						
30	Monarch, G.K.	5 x 6	725	1,250*						
30	Oxford	4 1/2 x 4 1/2	700	850						
30	Schaefer	5 x 6	525	905						
30	Sterling	5 1/2 x 6	600	1,190						
30	Van Blerck	5 x 6	650	1,150						
31	Loew-Victor	7 1/2 x 8 1/2	650	2,400						
32	Hall, G.K.	5 1/2 x 6 1/2	600	1,800						
32	Mason-Jäger, G.K.	5 1/2 x 6	650	1,300						
32	Scripps, G.K.	5 1/2 x 6	600	1,105						
34	Westman	5 1/2 x 6 1/2	600	100						
35	Atlas	6 x 7	550	2,450						
35	Blount	5 1/2 x 6 1/2	600	1,500						
35	Brennan, G.K.	5 x 5	700	850						
35	Fay & Bowen	5 1/2 x 7	550	2,100						
40	Aristox	4 1/2 x 4 1/2	600	1,300						
40	Carl	6 x 8	600	900						
40	Frisbie, G.K.	6 x 6	600	1,200						
40	Hall, G.K.	5 1/2 x 8 1/2	600	2,400						

RATED H.P.	MAKE.	BORE AND STROKE.	R.P.M.	WT.
18	Alexander & Cox	4 x 5	600	800*



Curtis 90, 110 and 160 h.p. motors, all of eight cylinders.

Domian, G.K.	5 x 6	535	1,500
Gilmore	4 1/2 x 5	650	600
Mason-Jäger, G.K.	4 9/16 x 6	650	1,550
Stork	5 x 6	550	2,100
Loew-Victor	4 3/4 x 5 1/2	600	1,300
Missouri	5 x 7	600	1,800
Lisk, G.K.	4 1/2 x 5	800	900
Scripps G.K.	4 1/2 x 5	800	980
Holmes	4 1/2 x 6 1/2	700	1,350
Schaefer	5 x 6	625	980
Brennan, G.K.	4 1/2 x 5	700	1,000
Domian, G.K.	6 x 6	535	1,835
Lamb	4 1/2 x 6 1/2	600	1,950
Monarch, G.K.	5 x 6	725	2,100*
Sterling	5 1/2 x 6	600	1,150
Van Blerck	5 x 6	650	1,450
Mason-Jäger, G.K.	5 1/2 x 6	650	1,300
Blount	5 1/2 x 6 1/2	600	2,150
Frisbie, G.K.	4 1/2 x 5	800	985
Hall, G.K.	5 1/2 x 6 1/2	600	2,400
Blount	5 1/2 x 6 1/2	750	1,600
Hall, G.K.	5 1/2 x 8 1/2	600	3,600
Mercury, G.K.	6 1/2 x 6 1/2	650	1,800
Monarch, G.K.	6 x 7	725	2,350
Standard	6 x 6 1/2	700	1,500
Van Blerck	5 1/2 x 6	650	1,260
Lisk, G.K.	6 x 7	700	1,200
Blount	5 1/2 x 8	750	1,800
Frisbie, G.K.	6 x 6	800	1,600
Speedway	6 x 6	800	1,800
Winton	6 1/2 x 9	550	5,400
Parsons, G.K.	6 1/2 x 8	600	4,050
Wisconsin Consistent	5 1/2 x 7	800	1,500
Campbell G.K.	6 1/2 x 6 1/2	800	1,300
Speedway	6 1/2 x 8	650	3,100
Craig	6 1/2 x 7 1/2	800	2,000
Speedway	6 1/2 x 8 1/2	600	4,500
Loew-Victor	7 1/2 x 8 1/2	650	3,100
Speedway	8 1/2 x 10	550	5,900

Eight Cylinders.

RATED H.P.	MAKE.	BORE AND STROKE.	R.P.M.	WT.
50	Gilmore, G.K.	4 1/2 x 5	650	940
55	Mercury G.K.	5 1/2 x 5	650	1,650
110	Mercury G.K.	6 1/2 x 7	650	3,200
200	Emerson	7 x 7	800	3,000



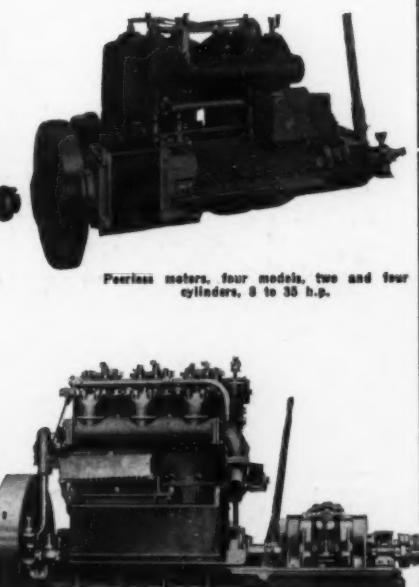
Kermath motors, four cylinders, 12 and 20 h.p.



Van Blerck Model E for 1915. This make has models 15 to 180 h.p., in two, four, six and eight cylinders.



Loew-Victor motors are built in 14 different sizes, one, two, three, four and six cylinders, 6 to 135 h.p.



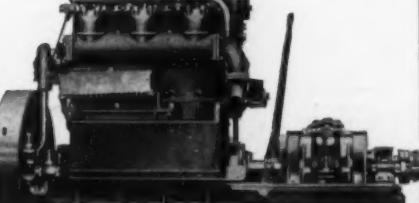
Peerless motors, four models, two and four cylinders, 8 to 35 h.p.



Frisbie four-cylinder motors, one, two, three, four and six cylinders, 3 to 75 h.p.



Red Wing motors, two and four-cylinder, one, two and four cylinders, 3 to 36 h.p.



San Francisco Standard, one, two and three cylinders, 4 to 116 h.p.

Light Weight & High Speed

Four Cycle Motors.

One Cylinder.

RATED H.P.	MAKE.	BORE AND STROKE, R.P.M.	WT.
2	Strang	3 x 4 1/2 1,000	360
3	Strang	3 1/2 x 5 900	390
4	Strang	4 x 5 900	480
6	Mercury G. K.	4 1/2 x 6 850	195
6	Strang	4 1/2 x 6 850	690
7	Parsons G. K.	4 1/2 x 6 850	510
8	Strang	5 1/2 x 6 850	750
8	Tygard	4 x 4 1,000	200*
10	Tygard	5 x 4 1,000	250*

Two Cylinders.

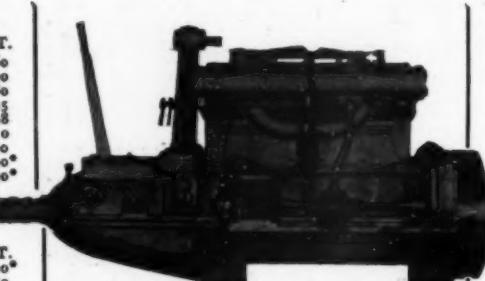
RATED H.P.	MAKE.	BORE AND STROKE, R.P.M.	WT.
5	Honest Injun	3 x 3 900	100*
10	Peerless G. K.	4 x 6 850	450
12	Beifuss	3 1/2 x 4 1/2 1,000	275
14	Parsons G. K.	4 1/2 x 6 850	740
15	Capitol	4 1/2 x 5 1/2 1,000	440*
16	Kemp (double opposed)	4 x 4 1,300	65*
16	Peerless G. K.	5 x 6 850	500
20	Beifuss	5 x 5 1,000	375
24	Mercury G. K.	4 1/2 x 5 850	450
100	Tygard	8 x 4 1,000	500*
300	Tygard	12 x 10 1,000	2,000*

Three Cylinders.

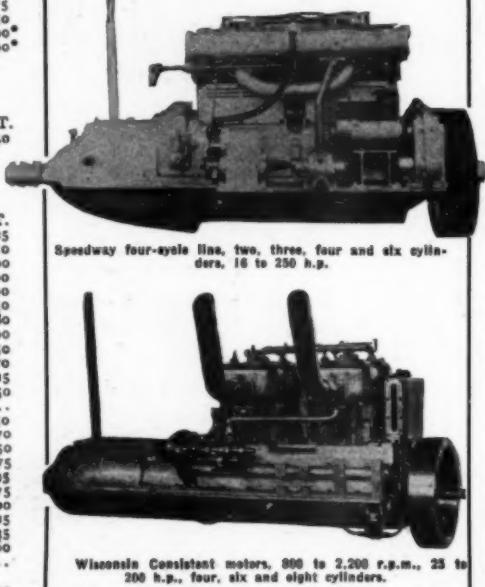
RATED H.P.	MAKE.	BORE AND STROKE, R.P.M.	WT.
21	Parsons G. K.	4 1/2 x 6 850	940

Four Cylinders.

RATED H.P.	MAKE.	BORE AND STROKE, R.P.M.	WT.
10	Sterling	2 1/2 x 4 1/2 1,000	225
12	Kermath	3 1/2 x 4 1,000	410
12	Wisconsin Valveless	3 1/2 x 4 900	300
13	Morton	3 1/2 x 4 900	500
16	Hoover	3 1/2 x 5 1,000	500
16	Lisk G. K.	3 1/2 x 4 1,000	350
18	Fay & Bowen	3 1/2 x 5 1,000	480
18	Murray & Tregurtha	4 1/2 x 5 820	500
18	Rice	3 1/2 x 4 1,000	350
20	Buda	3 1/2 x 4 1/2 1,000	370
20	Buffalo G. K.	3 1/2 x 5 820	545
20	Fulton	3 1/2 x 5 1,200	450
20	Ferro G. K.	3 1/2 x 5 1,000	.....
20	Kermath	4 x 4 1,200	450
20	Loew-Victor	3 1/2 x 5 1,000	470
20	Peerless G. K.	4 x 6 850	550
20	Speedway	4 x 4 1/2 1,000	495
20	Sterling	3 1/2 x 5 1,000	475
22	Brennan G. K.	4 x 5 1,000	400
22	Buda	3 1/2 x 5 1/2 1,000	435
22	Hoosier	3 1/2 x 5 2,000	560
24	Capitol	3 1/2 x 5 1/2 1,000	.....
24	Red Wing	3 1/2 x 5 1,000	.....
24	Thorobred G. K.	3 1/2 x 5 1,000	440
25	Buda	3 1/2 x 5 1/2 1,000	490
25	Doman G. K.	5 x 6 900	850
25	Erd G. K.	4 x 5 900	640
25	Hazard	4 x 4 1/2 1,100	525
25	Mason-Jäger G. K.	3 1/2 x 6 1,200	470
25	Miller	4 1/2 x 5 1,000	600
25	Morristown	4 1/2 x 5 850	525
25	Standard G. K.	4 x 5 1/2 900	500
25	Wisconsin Consistent	3 1/2 x 5 1,000	500
25	Wisconsin Valveless	3 1/2 x 4 1/2 900	425
28	Fay & Bowen	4 x 5 1,000	600
28	Fulton	4 x 5 1,200	490
28	Parsons G. K.	4 1/2 x 6 850	1,200
28	Red Wing	4 1/2 x 5 1,000	460
28	Thorobred G. K.	4 1/2 x 5 1,000	460
28	Reliance Continental	4 1/2 x 4 1/2 1,100	.....
28	Wisconsin Consistent	4 x 5 1,000	510
30	Buda	4 1/2 x 5 1/2 1,000	500
30	Buffalo G. K.	4 1/2 x 5 820	690
30	Ferro G. K.	4 x 6 1,000	.....
30	Gray	4 1/2 x 5 1/2 1,000	700
30	Hubbard G. K.	4 1/2 x 5 1,000	500
30	Loew-Victor	4 1/2 x 5 1,000	616



Scripps, heavy, medium and light weight motors, 4 1/2 to 96 h.p., one, two, four and six cylinders.



Wisconsin Consistent motors, 800 to 2,200 r.p.m., 25 to 200 h.p., four, six and eight cylinders.

RATED H.P.	MAKE.	BORE AND STROKE, R.P.M.	WT.
4	Murrow & Tregurtha	6 x 6	800
4	Reliance	4 1/2 x 5 1/2 1,000	750
40	Speedway	4 1/2 x 5 1/2 1,000	850
40	Wisconsin Consistent	4 1/2 x 5 1/2 1,000	660
45	Doman G. K.	4 1/2 x 5 1/2 1,000	650
45	Fay & Bowen	5 x 6	800
48	Scripps G. K.	5 1/2 x 6 1/2 1,000	865
50	Capitol	5 1/2 x 6 1/2 1,000	.....
50	Elco	5 1/2 x 6 1/2 1,000	765
50	Reliance Continental	5 x 6 1,000	.....
50	Sterling	5 1/2 x 6 1,000	1,190
50	Sterling	4 1/2 x 5 1/2 1,000	625
50	Van Blerck	5 x 6 1,000	860
52	Mercury G. K.	5 1/2 x 6 1/2 1,000	640
60	Elco	5 1/2 x 6 1/2 1,000	1,000
60	Maximotor	4 1/2 x 5 1/2 1,000	280
60	Mercury G. K.	6 1/2 x 6 1/2 1,000	1,100
60	Reliance	6 x 6 1/2 1,000	1,200
60	Wisconsin Consistent	5 1/2 x 6 1/2 1,000	900
65	Van Blerck	5 1/2 x 6 1/2 1,000	910
68	Fulton	5 1/2 x 7 1,000	910
68	Wisconsin Consistent	4 1/2 x 5 1/2 2,000	600
70	Maximotor	5 x 6 1/2 1,000	1,050
70	Robert's Motor	5 1/2 x 6 1/2 1,000	700
90	Reliance	6 1/2 x 7 1,000	2,500
90	Sterling	5 1/2 x 6 1/2 1,000	910
90	Van Blerck	5 1/2 x 6 1/2 1,000	940
100	Fulton	5 1/2 x 7 1,000	2,000
100	Wisconsin Consistent	5 1/2 x 7 1,000	875
110	Mercury G. K.	6 1/2 x 7 1,000	1,760
122	Wisconsin Consistent	5 1/2 x 7 1,000	1,100

Six Cylinders.

RATED H.P.	MAKE.	BORE AND STROKE, R.P.M.	WT.
7 1/2	Winton	2 1/2 x 3 1,200	300
15	Winton	3 x 4 1,200	600
33	Buda	3 1/2 x 5 1/2 1,000	525
41	Buda	3 1/2 x 5 1/2 1,000	685
42	Parsons G. K.	4 1/2 x 6 850	1,650
45	Scripps G. K.	4 1/2 x 5 1,000	790
45	Wisconsin Consistent	4 1/2 x 5 1,000	750
50	Brennan G. K.	4 1/2 x 5 1/2 1,000	775
50	Doman G. K.	5 x 6 900	1,122
50	Fay & Bowen	4 1/2 x 5 1/2 1,000	925
50	Ferro G. K.	4 x 6 1,000	.....
50	Fulton	4 1/2 x 5 1/2 1,000	700
50	Gray	3 1/2 x 5 1/2 1,000	840
55	Kemp	4 1/2 x 4 1/2 1,000	270*
60	Lambkin	3 1/2 x 5 1/2 1,000	780
60	Loew-Victor	4 1/2 x 5 1/2 1,000	1,050
65	Reliance	4 1/2 x 5 1/2 1,000	1,000
65	Fay & Bowen	5 x 6 1,000	1,150
70	Capitol	5 1/2 x 6 1/2 1,000	.....
75	Doman G. K.	6 x 6 900	1,662
75	Sterling	5 1/2 x 6 1,000	1,068
75	Van Blerck	5 x 6 1,000	1,150
80	Maximotor	4 1/2 x 5 1/2 1,000	375
90	Reliance	6 x 6 1/2 1,000	1,600
90	Wisconsin Consistent	5 1/2 x 7 1,000	1,200
100	Fulton	5 1/2 x 7 1,000	1,250
100	Loew-Victor	5 1/2 x 7 1,000	1,352
100	Maximotor	5 x 5 1/2 1,000	475
100	Mercury G. K.	6 1/2 x 6 1/2 1,000	1,250
100	Robert's Motor	5 1/2 x 6 1/2 1,000	825
100	Van Blerck	5 1/2 x 6 1,000	1,120
135	Sterling	5 1/2 x 6 1/2 1,000	1,160
135	Van Blerck	5 1/2 x 6 1,000	1,100
140	Speedway	7 x 7 1,000	2,250
150	Wisconsin Consistent	5 1/2 x 7 2,000	1,450
175	Wisconsin Consistent	5 1/2 x 7 2,000	1,428
200	Speedway	8 x 8 1,000	2,800

Eight Cylinders.

RATED H.P.	MAKE.	BORE AND STROKE, R.P.M.	WT.
4	Kemp	4 1/2 x 4 1/2 1,200	375*
4	Curtiss	4 x 5 1,200	320*
4	Curtiss	4 1/2 x 5 1/2 1,200	450*
110	Maximotor	4 1/2 x 5 1/2 1,200	525
120	Van Blerck	5 1/2 x 6 1,200	1,450
135	Achilles	5 1/2 x 7 1,500	800
150	Curtiss	5 x 7 1,400	690*
180	Van Blerck	5 1/2 x 6 1,600	1,425
200	Fulton	5 x 5 1/2 2,000	.....
200	Wisconsin Consistent	5 1/2 x 5 1/2 2,000	1,375
220	Mercury G. K.	6 1/2 x 7 2,000	1,700
225	Sterling	5 1/2 x 6 1/2 1,500	1,400



Thala, a 36-foot family runabout, built by Hutchison Bros., of Alexandria Bay, N. Y., and powered with a 75-h.p. Sterling motor.

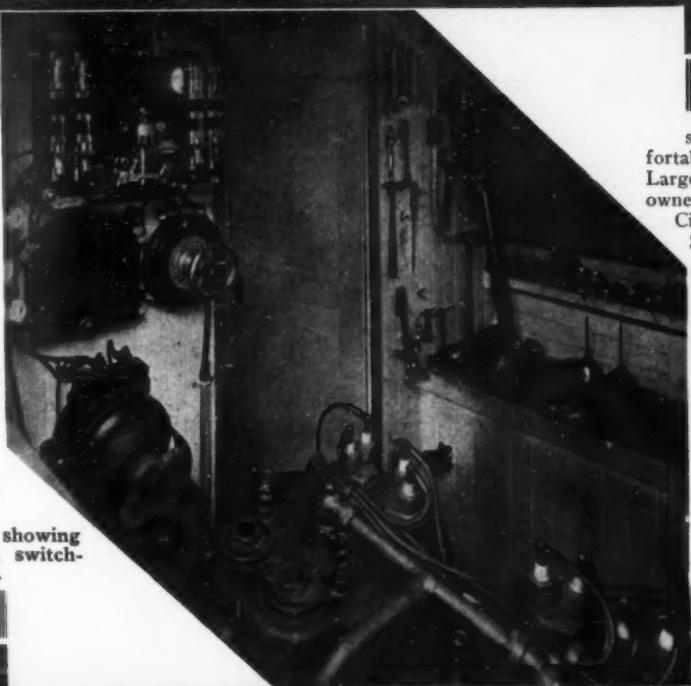
Two Brothers A Unique Craft



AILS are coming into general use more and more on up-to-date motor craft, not because their power plants are unreliable, but because of the fact that the best designed motor boats roll more or less in a seaway, this being especially noticeable in a following sea. A small spread of canvas will make any boat much easier and more comfortable and for this reason alone sails are often fitted.

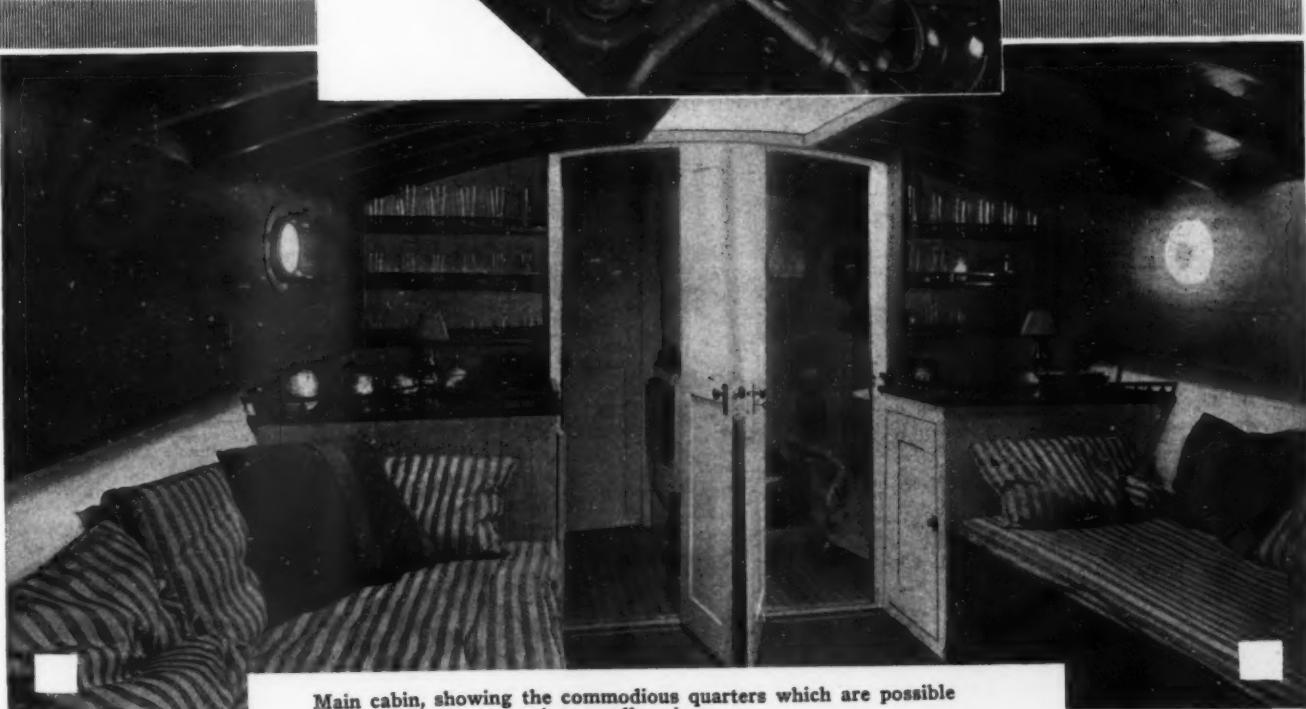
Two Brothers, shown on this page, is an excellent example of real sea boat. Not only is she

Engine-room of Two Brothers, showing the 4-cylinder Sterling motor, switch-board, work bench, etc.

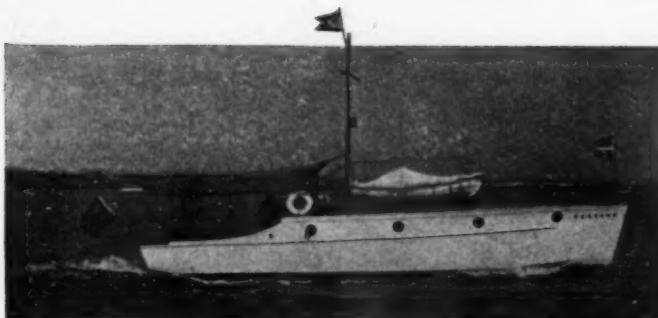


seaworthy, but she is a very comfortable boat below decks, as well. Large, roomy and well planned by her owners, Messrs. Brooks, of New York City, with the assistance of Cox & Stevens, she is used mostly in the shallow waters off the south shore of Long Island but is perfectly safe to go anywhere. A 30-50 h.p. Sterling motor gives Two Brothers a good nine miles speed. The motor is located nearly amidships in a large engine room with a real man-size work bench, as will be seen from the illustration.

Extensive cruises were taken during the past summer in Two Brothers, with a great deal of outside sailing.



Main cabin, showing the commodious quarters which are possible in a small cruiser.



A 35-foot Monitor cruiser, built from Monitor knock-down frames.



A 31-foot cruiser, built by the Milton Boat Works.

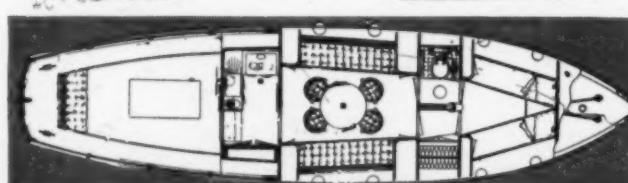
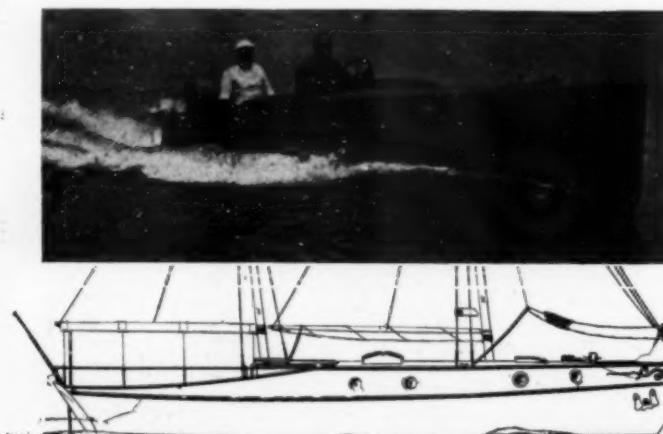


One of Albert Hickman's sea-sleds, built by Murray & Tregurtha.



Stock open boat, built by the Cleveland Auto Boat Mfg. Co.

Morris M. Whitaker's air-cushioned runabout.



A dory cruiser, built by the Seaman Motor & Launch Works.

Standardized

Stock Boats Suitable for Any Requirement
The Increasing Popularity of the Standardized

Milton Boats.

While most of the boats built by the Milton Boat Works, of Rye, N. Y., is done on order, they have a number of stock models. One of these is a 31-foot cruiser having keel and frames of selected oak, planking of cedar and long leaf yellow pine, deck of cypress, canvas-covered, and brightwork of mahogany. This boat, powered with a 12 h.p. motor, approximates a speed of 8 m.p.h., while with an 18-25 h.p. engine a speed of 9 1/4 miles is attained. Other boats, representative of their line, are a 22 1/2-foot runabout and a 12-foot dinghy. The former is fitted with a 2-cylinder 11 h.p. Ferro engine with reverse gear and rear starter, the power plant being calculated to give a speed of 13 m.p.h. All fittings are for salt water service, and both these boats are built of the best materials obtainable.

Monitor K-D Boat Frames.

For many years the Monitor Boat & Engine Co., of Newark, N. J., have furnished knock-down frames of open family launches, runabouts, high-speed boats and hydroplanes, and all types of raised deck, trunk cabin, and bridge deck cruisers. They have recently added to their line two sizes of cabin sharpies, which on account of their extremely light draft make them particularly adaptable for use in Florida, Texas and other Gulf States. These cabin sharpies are stated to possess all the advantages in room and comfort that will be found in cruisers of regular types. The open sharpies which have been furnished in knock-down form by this company for several years have taught them a good deal which proves of advantage in the proper modeling of these boats, and besides being cheap and easy to build, it is stated that they will be found to be safe, roomy and extremely good sea boats.

Viper Sea-Sleds.

The Viper Co., of Pictou, N. S., of which Albert Hickman is the president, build Viper inverted V sea-sleds in a number of sizes, of which the 20-foot and 26-foot are the most popular. In these boats there is practically no point of similarity to displacement boats or hydroplanes, for the bow is blunt and wider than the stern, while by reason of the inverted V-bottom, the waterlines are outward curving instead of in-curving, and the topsides are parallel fore and aft. Steering is by side plate rudders, and the shafts run at practically no angle through the stern transom, and operate surface propellers in which only two blades are submerged at one time. Sea-sleds operate well in shallow or weed-filled water, and show no tendency to trip or dive in rough water. Murray & Tregurtha, of South Boston, Mass., have the American rights for these boats.

Cleveland Auto Craft.

The Cleveland Auto Boat Mfg. Co., of Cleveland, O., manufacture a line of open pleasure boats and cabin pleasure and work boats ranging in length from 18 to 60 feet. Perhaps the most popular model in their line is a 25-footer, known as the Gentleman's Runabout. This runabout, which is finished in mahogany, is copper and brass-fastened throughout, and put together in a way which is particularly distinctive. The beam is 4 feet 6 inches and the extreme draft 18 inches. Ample room is found in the cockpit, which measures 11 feet in length, and the motor is covered over forward of a bulkhead, through which the automobile type steering wheel is brought. Fitted with an 11 h.p. Ferro motor this boat is credited with a speed of 14 m.p.h.

Morristown 28-Footer.

The Morristown Boat & Engine Works of Morristown, N. Y., offer a stock 28-footer having a beam of 5 feet and a draft of 2 feet. This runabout has keel, stem, and frames of white oak, with 1/2-inch cedar or white pine for the planking. A feature of this boat is the engine bed, which runs over two-thirds of the length of the hull, thus distributing and minimizing the vibration of the engine. A 3-cylinder, 2-cycle, 15 h.p. Morristown motor is installed, equipped with reverse gear, and automobile type steering wheel, or a 4-cycle, 4-cylinder, 20 h.p. engine of the same make with the same equipment may be fitted. The other equipment includes automobile top, running lights, cushions, life preservers, etc.

A Whitaker Stock Model.

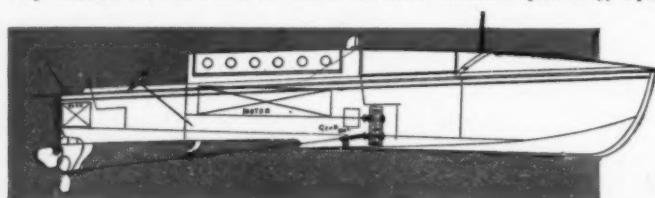
Morris M. Whitaker, of Nyack, N. Y., has recently come forward with a 21-foot stock model which incorporates a new theory in under-body design. The under-body sections are bell-shaped, the shape of the bow and other sections being arranged so as to collect the bow wave and some of the water displaced by the movement of the boat through the water, and utilize this to lift the hull something after the hydroplane fashion. The original model of this boat, having a beam of 4 1/2 feet, was tried out under admiralty conditions, with and against the tide and with a 20 h.p. Loew-Victor motor, turning a 15 x 20-inch Columbian averaged 20.97 m.p.h. over an accurate course. Since the first trials the designer has discovered that within certain limits the beam does not affect the speed, so the beam has therefore been increased to 5 feet. Other improvements have been effected over the original model with the result that a very satisfactory boat has been secured.

Two Sea Bright Dory Cruisers.

The Seaman Motor & Launch Works, of Long Branch, N. J., are directing a large part of their attention this year to the construction of two stock Sea Bright cruisers, modeled after the famous Sea Bright dories. These cruisers, by reason of their flat bottoms, may be readily beached without cradles, and it is pointed out that not only may they cruise in exceedingly shallow water, but because of their seaworthy construction, may ride out a storm with little discomfort to their passengers. The largest of these boats, a 40-footer with 10-foot beam, is laid out below with full 6-foot headroom, the arrangement plan calling for chain locker in the bow, cabin with berths for two aft, toilet on the port side following with locker space opposite, and saloon aft of this with galley just forward of the cockpit bulkhead. The engine is housed under the cockpit floor. The sail rigging is unique, consisting of buck-eye-rig jib and two leg-o-mutton sails. The 25-footer is arranged with galley forward of the cabin and toilet in the bow.

A 20-Foot Grenier Hydroplane.

The Grenier Motor Boat Co., of Troy, N. Y., have recently added to their already complete line of standard models, a 20-foot hydroplane having concave bottom with one step. The boat has a beam of 5 feet, and with all seats occupied accommodates six persons. Particular care is taken in the construction of this hydroplane and only the best material is used. The frame is of white oak and brass screws and bronze bolts are used for fastenings. The trim is of quartered oak or mahogany, highly polished, and with all screws plugged. The motor drives through a 1 1/2 to 1 reduction gear installed under the forward seat, and with 90 h.p. installed it is stated that one boat of this model attained a speed of 44 m.p.h.



Single-step hydroplane, built by the Grenier Motor Co.

Motor Boats.

and to Meet the Owner's Most Exacting Need.
Models Evident from the Excellency of Their Designs

Doyle V-Bottom Boats.

The American Launch Co., of Bayonne, N. J., produce a number of stock models of the V-bottom type, and the 20-footer, Bear-Cat, similar to those shown on this page is one of their most interesting models. This particular boat is owned by Mr. J. E. Campbell, of Charleston, W. Va., and is powered with a 40-50 h.p. Elbridge motor, the power being transmitted to the propeller by means of forward gears. The engine is set well back in the hull. Under favorable conditions, this boat is stated to have shown a speed of 27 miles an hour and she is considered the fastest boat on the Kanawha River. It is interesting to note that Mr. Campbell bought this boat in an unfinished condition, known as "the hull in the rough," and finished it himself. This model is regularly put out in different stages of construction by the American Launch Company.

Defoe Stock Boats.

Two noteworthy types of Defoe stock boats, made by the Defoe Boat & Motor Works, of Bay City, Mich., are their 37-foot cruiser and their 18-foot family open boat. The former of these, a picture of which is shown on this page, has an extreme beam of 9 feet 6 inches, and a draft of 2 feet 4 inches. The keel, frames, and floor timbers are of white oak, and the planking is of clear Louisiana red cypress, clinch-nailed to the ribs, with all fastenings countersunk. There is a stateroom forward under the raised deck, and this is reached from the bridge deck through a companionway of the conventional type. Part of the engine-room is under the raised deck, giving full headroom, and the remainder under the bridge deck. A 24 h.p. Gray motor is installed. The main saloon is located in the aft cabin trunk and is fitted with table, lockers, etc., and sleeping accommodations for four. The galley is forward of it and the toilet room is opposite the galley. The 18-footer has a beam of 5½ inches, a freeboard forward of 28 inches and a draft of 14 inches. This little runabout seats 8 persons comfortably, and with a 3 h.p. Gray or Stork motor, has a speed of from 8 to 9 m.p.h.

Pioneer Perfect Frames.

The Pioneer Boat & Pattern Co., of Bay City, Mich., have an extremely complete line of boat patterns and frames from which the amateur may select. The various models cover practically the whole range of pleasure boats from 9-foot tenders to 50-foot tunnel stern cruisers. Pioneer Perfect frames are all machine-made, so that uniformity is maintained to the fractional part of an inch, and it is stated that once the workman in the factory has set up the hull and marked the joints, it is practically impossible for the purchaser to make a mistake in re-assembling his boat. The instructions that accompany each set of patterns are written in simple, untechnical language, easily understood by the layman.

The Rice Ten-passenger Runabout.

The accompanying plans are of the Rice ten-passenger stock runabout, manufactured by the Rice Brothers Co., of East Boothbay, Me. The boat is 19 feet over all by 5 feet in beam, and when equipped with an 8-10 h.p. 2-cylinder Rice motor operates at from 10 to 12 m.p.h., according to the number of passengers carried. The hull has easy lines forward, working into quite a deep deadrise amidship, where the engine is placed, then widening into a flat after underbody. Centering the engine gives the boat a good balance, and leaves plenty of room forward for space under the deck. The engine, with muffler, batteries and spark coil is completely housed in a paneled mahogany cabinet with hinged top, and the steering wheel is located at the after end of this cabinet with drum and steering ropes inside. There is a passageway at the side of the engine to allow free access to the compartments forward and aft of it. The seating arrangements are ample for ten people. Planked and decked with cedar, with mahogany trimmings, and with a heavy cloth top, this boat sells complete for \$350.

Hacker Fast Boats.

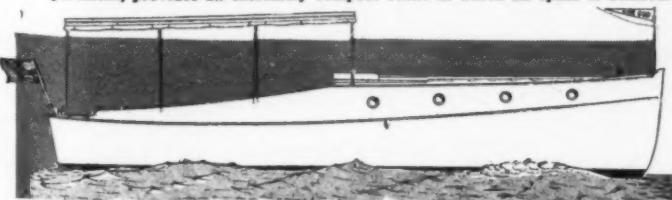
The John L. Hacker Boat Co., of Albany, N. Y., have as stock models a number of fast runabouts built in 24, 26, 30, 32 and 36-foot sizes with guaranteed speeds ranging from 20 to 40 m.p.h. The plans shown on this page are of their 32-footer, and all their models are similar in design to this craft. This new type has some distinctive features, including a one-man top, bucket seats with passageway between, streamline effect from deck to bulkhead, watertight windshield, etc. All deck fittings are especially designed for this boat and cast by the Hacker Company. All Hacker boats are of selected mahogany, finished with the utmost care, and the equipment is complete, including such items as electric lighting and starting system, tachometer, ammeter, electric hour cushions, lazy-backs, floor coverings, chairs, etc. A paragraph in their contracts states that any item which the customer thinks should have been included in the equipment will be furnished to him free of charge.

Cape Cod Dories.

The Cape Cod Power Dory Co., of Wareham, Mass., turn out stock boats of the dory type which are noteworthy for their seaworthy characteristics. One of the latest of their boats is a 28-foot cabin cruiser designed by Gurney. This is a very neat little packet in which every square inch of interior space has been utilized to the greatest advantage. There is a water tank in the bow, followed by a Sando closet, and being followed, in turn, by a cabin sleeping two. A bulkhead divides the cabin from the galley and engine-room and provides a support for the raised deck. Aft of this bulkhead are two lockers, and on the starboard side next aft is an icebox and tool locker. To port are the sink and a two-burner stove with lockers beneath. The motor is a 2-cylinder Palmer, rated at 10 h.p., and provided with a reverse gear which extends out into the cockpit.

Howard Cruisers.

One of the many attractive stock cruisers put out by the Howard Cruiser Works, of Westfield, N. Y., is a 27-footer which sells complete for \$850. This cruiser is built with either the continuous rib or the butt rib construction. By continuous rib construction the makers mean that the ribs are in one piece and bolted to the keel, this method eliminating a big percentage of the working strain to which all boats are subject. The ribs in the butt construction are butted to the face of the keel and screwed into timbers. Another stock model is one having an overall length of 30 feet 10 inches and a beam of 9 feet. A speed of 9 m.p.h. can be obtained from this cruiser when fitted with a Fulton self-sparking motor, and the arrangement plan, with galley forward, cabin next and engine in separate compartment, provides an extremely compact outfit in which all space is utilized.



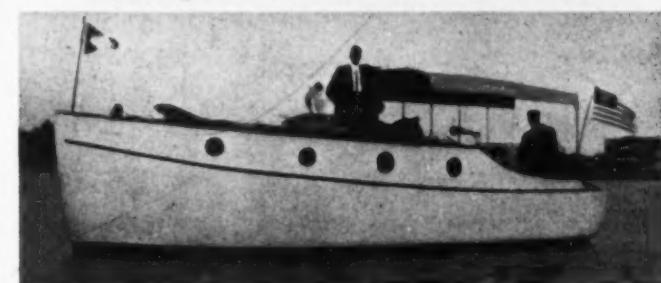
The Cape Cod Power Dory Co.'s stock cruiser.



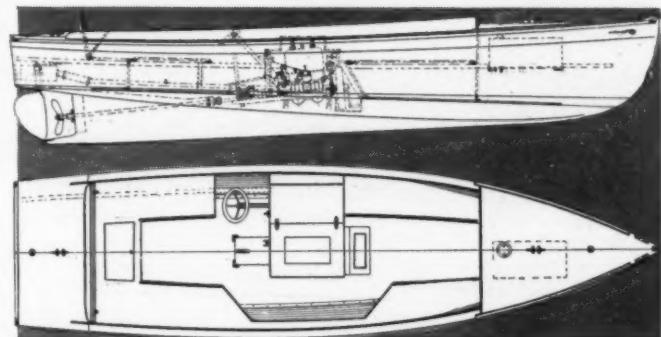
A twenty-six foot runabout built by the American Launch Co.



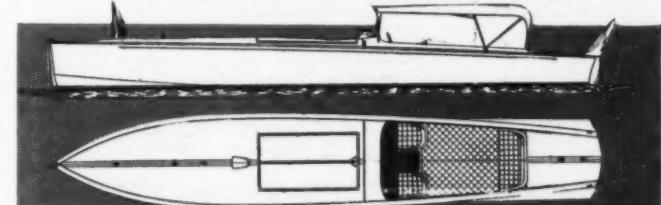
Stock cruiser, built by the Defoe Boat & Motor Works.



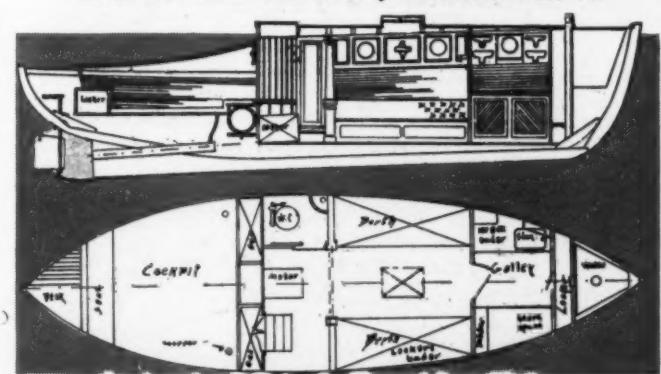
A 26 foot cruiser, built from stock patterns by the Pioneer Boat & Pattern Co.



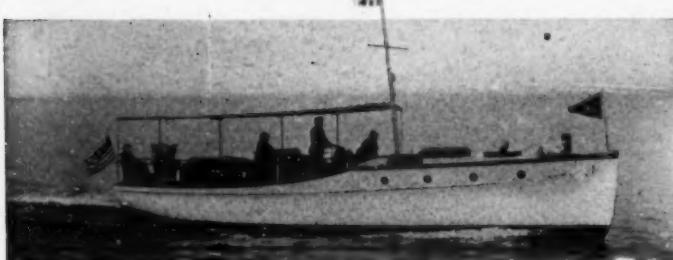
Ten-passenger runabout, built by Rice Bros. Co.



One of the stock models built by the Hacker Boat Co.



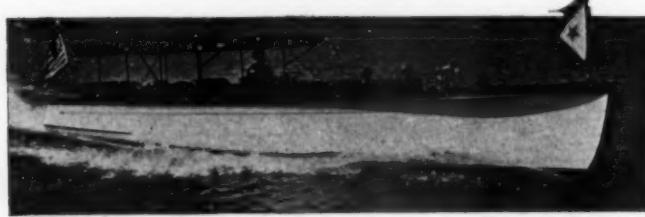
Stock cruiser built by the Howard Boat Works.



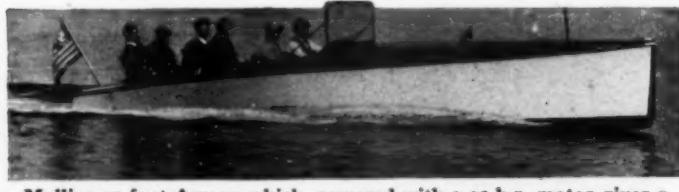
A 45-foot standardized Elco cruiser, powered with a 4-cylinder, 37 h.p. Standard motor.



Seabury yacht tender, built by the Gas Engine & Power Co. & Chas. L. Seabury Co., Cons.



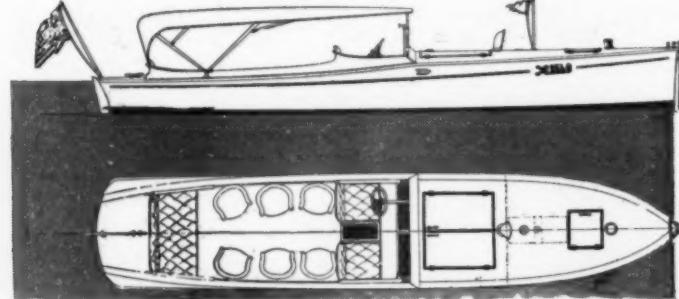
Belinda, 37-foot runabout built by the Niagara Motor Boat Co., powered with a 6-cylinder, 64 h.p. Fay & Bowen motor.



Mullins 25-foot Arrow, which, powered with a 35 h.p. motor gives a speed of 20 miles an hour.



A 24 by 5-foot 4-inch displacement—plane, built by the Valley Boat & Engine Co.



The New X-Celo 30-foot runabout, designed and built by the Milwaukee Boat Co.



A 22-foot Toppan dory, built by the Toppan Boat Mfg. Co.

Elco Standardized Models.

The Elco Company, of Bayonne, N. J., will continue to build for 1915 their popular 45-foot Elco cruiser with slight modifications in details of hull design and cabin accommodations, the same general design, however, which has proved so successful in the past, being retained. Their 36-foot Elco Express, with a guaranteed speed of 24 m. p. h., is offered with a few slight changes in detail, but so far as general design goes this model bears a resemblance to the first of its type, exhibited at Madison Square Garden ten years ago. This next year, too, the building of the popular 36-foot Express will be continued. This speedy craft is fitted with a four-cylinder Elco engine having electric starter, and it is equipped with electric lighting equipment, together with automobile hood and wind shield. These three boats are all built to a very high standard, seaworthiness, appearance, speed, workmanship and material all being taken into consideration.

Speedway Runabouts.

The Gas Engine & Power Co. and Charles L. Seabury & Co., Cons., of Morris Heights, N. Y., make a number of yacht tenders and runabouts which are noteworthy for their construction and finish. The runabout upon which this concern lays especial emphasis is a 30 by 6-footer having a draft of 2 feet 2 inches and developing a speed of 15 m.p.h., equipped with a 4-cycle, 4-cylinder, 24-30 h.p. Speedway engine. The hull is built of selected white cedar planking on white oak or elm frames, copper riveted. Decks, coaming, covers over the motor, and the interior trim are of selected mahogany. The equipment includes a leather-covered cushion and upholstered back for the thwart seat and four wicker arm-chairs with leather cushions; linoleum for the floor, six regulation life-preservers, two cork fenders, running lights, brass chocks and cleats, bilge pump, fog horn, bell, anchor, etc. This outfit is listed at \$2,650, and such articles as self-starting system, awning, hood or roof, etc., may be had as extra equipment.

Belinda, a Niagara Stock Model.

One of the illustrations in this department shows Belinda, owned by Mr. L. S. DeGraff, of North Tonawanda, N. Y., and built by the Niagara Motor Boat Co., of North Tonawanda, after one of their stock designs. This boat, which has a beam of 6 feet, is equipped with a 64 h.p., 6-cylinder Fay & Bowen engine, with electric starter and pedal reverse controls, and while her construction makes her primarily a strong, seaworthy craft, she yet makes a speed of 19 m.p.h. A very convenient arrangement in this runabout is the divided steersman's seat, by which one can step to the after part of the cockpit without climbing over a seat. All three of the seats have deep box-spring upholstery, and are covered with genuine leather. The decks and interior are handsomely finished in Honduras mahogany. The Niagara Company, in addition to many other types, is now building this runabout as a stock model.

Mullins Steel Boats and Standardized Wooden Launches.

The W. H. Mullins Co., of Salem, O., will present for the season of 1915 the most complete line they have yet put out, comprising eight models in the seamless steel construction—from 16 to 28 feet in length, having from 3 to 25 h.p. in both 2- and 4-cycle types of motors—and five standardized wooden models ranging in length from 16 to 25 feet and having the same range of horsepower as mentioned above. The makers state that their 16-foot, 25 h.p. steel hydroplane, with a guaranteed speed of 25 m.p.h., is the fastest boat for its size and power that they have seen. Their patented steel construction, they claim, is particularly adapted to hydroplane usage, as it is able to resist successfully the vibration and racking of the powerful motors usually installed in hulls of this type. In addition to their regular line of rowboats, this company will offer for 1915 a line of boats in steel and wood especially adapted to the use of outboard motors. These boats are so designed that they will ride on an even keel, and they are of good freeboard and will withstand rough water. The stern boats are of especial construction to meet the needs of outboard motors.

Valley V-Bottoms.

The Valley Boat & Engine Co., of Saginaw, Mich., has an exceedingly comprehensive line of stock boats which may be purchased in various stages of the rough, as well as in completed form. These boats range from their 16-foot hydroplane to a 35-foot V-bottom bridge deck cruiser. The 16-foot racer with the proper power equipment is capable of a speed of 33 m.p.h., and this model is the one made famous by Ugly Duckling, at last summer's Peoria races. Design No. 1174 is a 17-foot hydroplane which is the oldest boat listed by this company and also the lowest in price. This model is recommended by the makers to those who want a fast but inexpensive boat. Other models include a 24-foot wave-collecting V-bottom runabout having a beam of 5 feet 4 inches, 1 foot 8 inches draft, a seating capacity of 6 to 8 persons and a speed of 15 to 26 m.p.h. This model can be furnished in any desired wood or finish, making, as the manufacturers point out, a luxurious high-class runabout within reach of any purse.

A New X-Celo Runabout.

The accompanying plans are those of the new 1915 X-Celo family runabout designed and built by the Milwaukee Yacht & Boat Co., of Milwaukee, Wis. Several of this model have already been built. While the usual X-Celo features have been incorporated in this model, it will be noticed that it varies slightly in general appearance, owing to the desire of the builders to produce a large carrier and yet eliminate any tendency towards an ungraceful appearance. The construction throughout is particularly substantial, the aim of the builders being to turn out a boat that is comfortable and seaworthy. The plans show a length of 30 feet and a beam of 6 feet, and with this generous beam the cockpit, which is 13 feet 6 inches in length, easily accommodates eleven persons in the fixed seats and wicker chairs. The seats are of the deep box-spring type, with backs, and are covered with genuine hand-buffed leather. The patented X-Celo disappearing windshield is part of the equipment which also includes an electric starter for the four-cylinder motor, electric running lights, one-man top, etc.

Toppan \$150 Sportsman and Other Models.

The Toppan Boat Mfg. Co., of 21 Haverhill St., Boston, Mass., have a little 15 by 5-foot dory called the Sportsman, which is equipped with a 2 h.p. motor, and in which they take considerable justifiable pride. This little craft has an extra thick bottom, oak timbers, pine planking, and galvanized iron fastenings, and is especially designed for use by hunters and fishermen. It sells for \$150, and for \$160 with a 3 h.p. Gray motor. This company has done a good deal of work for the Government, and some of their stock models are built on lines after the combined ideas of Capt. J. J. O'Brien, of the U. S. S. Fish Hawk, and the Toppan Company. These models, which may be had in 22, 27 and 30-foot sizes, are fairly speedy with medium power and are especially fitted for use in rough water. Among the many boats put out as stock models by this company, the 14-foot Hydroplane Bullet is considered particularly attractive. This boat also sells for \$150.

Seabright dory, built by W. H. Jerolamon.



Michigan Steel Boats for 1915.

The Michigan Steel Boat Co., of Detroit, Mich., will continue without any radical changes the manufacture of their four-ply lock-seamed and welded steel boats, making their 18-foot Advance model the leader for the year. These boats are guaranteed rust-proof and, by reason of special air lockers, unsinkable, while the models for the new year show many improvements in finish and equipment. The 18-footer referred to has a beam of 4 feet 6 inches and a cockpit 11 feet 4 inches long. It seats 10 persons, and with a 3 h. p. Detroit engine tests out at 10 miles an hour. Crated for export the boat weighs 1,400 pounds, and all boats are crated without charge.

Jerolamon's Seabright Dory.

Willard H. Jerolamon, of Galilee, N. J., continues to produce his famous Sea-bright dory, having a length and breadth of 20 feet by 5 feet 8 inches. This dory, which is copper fastened throughout, is constructed with frame of white oak and planking of $\frac{3}{8}$ -inch cedar in long lengths. Finished with three coats of paint and equipped with a 5 h. p. Hartford motor, this little craft sells for \$310.

A Fay & Bowen 21-Foot Tender.

The Fay & Bowen Engine Co., of Geneva, N. Y., have recently produced a 21-foot yacht tender which differs materially from the usual boat of this type. She is constructed with keel, stem and stern posts of white oak, with planking of Southern white cedar, and with decks and interior of mahogany. The cockpit accommodates six or seven passengers in addition to the helmsman, who controls the boat from an automobile steering wheel on the port side. The motor installed is a 15-28 h.p., 4-cylinder, 4-cycle Fay & Bowen engine, which drives the boat at an 18-mile rate. This motor is accessible under the deck forward by hinged hatches. A spray board, air scoop, upholstered seats, and brass deck fittings are included in the exterior fittings. The boat measures 21 feet in length by 5 feet beam.

Racine Boats.

The Racine Boat Company, of Racine, Wis., offer an extremely complete line of stock models in various types. These boats are all built to one standard and the general specifications of one model apply to nearly all models. The frames are constructed with keel, stem and stern post of white oak, substantially riveted together, and the ribs are of straight-grained white oak, steam bent and correctly spaced. Strengthening frames are inserted where the motor is located. The planking is of white oak or cypress, screw-fastened and caulked with the best yacht spun cotton, and the decking is of clear white cedar, mahogany finished. Cockpits are completely ceiled with narrow strips of cypress and copper nailed. The insides of hulls are given one coat of boiled linseed oil paint before the ceilings are fitted, and the outsides of boats are painted three coats of anti-fouling green paint below the waterline, and three coats of yacht-white above, the last coat being enamel. All boats and engines produced by this company are guaranteed to give satisfaction.

A Twenty-Five-Foot Speed Runabout.

The Nyack Marine Construction & Engine Co., of Nyack, N. Y., is specializing solely on a 25-foot speed runabout which has been designed for them by Morris M. Whitaker. Because of quantity production it is possible to turn out this boat with oak trim and a 15-20 h.p. motor for \$650, and with mahogany trim and a 35-40 h.p. motor for \$875. In constructing these boats a master boat was first built and thoroughly tested out. Then the hull was disassembled and steel or bronze templates were made of every part. Now, each boat is built of frames and planking accurately cut to these templates, so that a high standard of uniformity and excellence is maintained in their construction. The runabout has a beam of 5 feet and a draft of 20 inches. With the 15-20 h.p., four-cycle motor a speed of 13-15 miles is attained, and with the 35-40 h.p. engine the speed is 18-20 miles per hour.

Brooks Knock-Down Boats and Plans.

The Brooks Mfg. Co., of Saginaw, Mich., have added V-bottom boat plans and parts to their already complete line, so that it is now possible for the amateur to build this speedy type of boat himself. By the Brooks' system, it is possible to purchase full-size patterns or knock-down frames with plans and instructions, or complete boat parts, ready for assembly. Their latest V-bottom boats, they state, are even easier to build than their other types, while they offer greater speed and greater seating capacity for hulls of any given length. The shape of the bottom, or what is called the angular bilge, keeps the boat from rolling when running in cross seas.

Davis Dinks.

The year rolls round to find the Davis Dinks, manufactured by the Davis Boat Works Co., of Sandusky, Ohio, as popular as ever. These Dinks are made in Special and Stock classes, in 14 and 16, and 12 and 14-foot lengths, respectively. The two classes are practically the same in model and appearance, but the Special boats are fitted with forward and after decks, while they are of slightly heavier construction. Made in mahogany and oak trim, the two grades range in price from \$200 to \$240 for the Special class, and from \$115 to \$150 for the Stock, with all fittings, but exclusive of the motor. Any motor of suitable size will be installed at the purchaser's direction.

A New Water Craft Stock Model.

In addition to their well-known Dandy Dink, the Water Craft Co., of 221 Fulton St., New York City, are now offering a 16-foot stock model, Sport, Jr., to meet the requirements of the duck hunter and fisherman. There is a 6-foot 4-inch sleeping cabin extending aft from the peak bulkhead, and the floor is covered with a thick khaki mattress. There is sufficient headroom for anyone when sitting on the mattress. Aft on a shelf on the port side is a two-burner stove, with mushroom ventilator cover, and the 2-cylinder 6 h.p. motor is centered aft in the cabin. There is a cockpit having a fixed seat accommodating three, and there is also room for three camp chairs in this compartment. The luggage cockpit aft is used for stowing decoys, etc., and on either side of the propeller tunnel and under this cockpit floor are live-boxes, which, by plugging the water intakes may be converted into ice boxes. The propeller is entirely protected by the tunnel in which it turns, and the draft of the boat is only 8 inches. The gasoline tank is carried under the after deck, and there are ammunition locker and gun racks in the cabin.

Chandler-Dunlap Company's Line.

The Chandler-Dunlap Co., of Seattle, Wash., turn out many different types of stock models, ranging from a little motor tender, costing \$150, to a \$5,000 speedy day cruiser. One of their models, which is furnished with various motors, making a variation in cost of from \$375 to \$1,500, is Baby Bullet, a 12-footer. Being of V-bottom construction, running to a perfectly flat bottom aft, this little boat is claimed to be exceptionally easy to drive over the water, very seaworthy for its length, and very dry in a chop. With a 20-h.p. motor a speed of 27 to 31 h.p. is obtained. Baby Bullet is planked with white cedar, each plank being in

Dandy Dink, built by

the Water Craft Co.



A twenty-one foot Fay & Bowen yacht tender which is somewhat out of the ordinary in design.



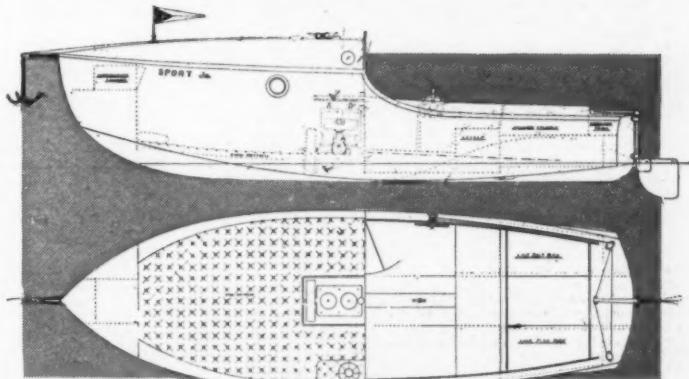
Cruiser built by the Racine Boat Co., Racine, Wisconsin.



A thirty-foot Elco express, having a speed of 20.7 miles per hour.



Stock design V-bottom runabout built by the Brooks Mfg. Co.



Sport, Jr., the new 16-foot Water Craft stock model. It has many features including a short boom and hinged rudder which lifts up on striking an obstruction.



One of the Davis dinks, carried in the 10, 12, 14 and 16-foot stock sizes.

AMERICAN MOTOR · BOAT · PARTS AND · ACCESSORIES

Baldridge Gears.

The Baldridge Gear Co., of Detroit, Mich., manufacture a line of reverse gears adapted to all kinds of marine engines up to 80 h. p., and which sell at prices ranging from \$10 to \$15. The mechanism of Baldridge gears is entirely enclosed by the case, so that the device receives perfect lubrication and yet does not throw the lubricant around. The main shaft of this gear is an unbroken section for the entire length of the machine, and is supported by the main bearing at both ends. The double expanding internal rings are of a special hardened metal, which, bearing on the iron drum form a combination excellent for both friction and wearing qualities. Adjustment of this gear is a simple matter as there is a handhole plate in the case that gives access to the adjusting screws.

Johnson Marine Reverse Gears.

These new ball bearing Model F reverse gears are made in sizes Numbers 0, 1 and 2 by the Carlyle Johnson Machine Co., of Manchester, Conn., for use with motors developing 5, 15 and 30 h. p. respectively in high speed service, and 3, 7 and 15 h. p. in medium speed service. The mechanism of these gears consists of a nest of spur gearing, incorporated within a clutch body, on each end of which are mounted clutch members of the Johnson type of clutch. These gears run on four hardened shafts, which are small in diameter, but because of the metal in them and the heat treating and hardening process to which they are subjected, are of more than ample strength for their required work. The gears are always in mesh with the engine and propeller shaft pinions, and these extend far enough through the gear cage to be coupled to, and are supported in babbitt bearings.

Gies Gears.

Previous to this year the Gies Gear Co., of Detroit, Mich., had confined their attention to three models, Special No. 1, Model A and Model B, but this year they have increased their line by Models E and F, of the enclosed type. Model E transmits 1½ h. p. per 100 revolutions (this rating being based on high speed engines turning at about 900 r. p. m.), and should not be used on an engine larger than a two-cylinder 4½" x 4½", or with a propeller larger than a three-blade, 17-inch, while Model F transmits 3½ h. p. per 100 revolutions on the same basis, and should not be used with an engine larger than a four-cylinder 4½" x 4½" with a three-blade 20-inch propeller. The open models transmit from 12 to 35 h. p. Gies gears are carefully jig-made to insure accuracy, and every part is absolutely interchangeable.

The Gordon Reversible Propeller.

The Gordon reversible propeller, made by the Gordon Propeller Co., of Cleveland, O., is so designed that the sleeve does not slide forward and back through the stuffing box. This keeps down the wear and tear, and insures a tight, compact outfit. The arrangement of the hub and blades, with casing, and front and back casing nuts, is such that there is no leakage through the joints. The manufacturers point out especially that the wheel answers quickly to the lever and may be set at any intermediate pitch desired from full go ahead to full reverse. The outfit takes up little room, and all the inboard mechanism is easily accessible for oiling, while the hub is sand-proof, which makes it desirable for use in shallow water. The bronze tubing and all other parts of this outfit are made of generous size for efficiency's sake.



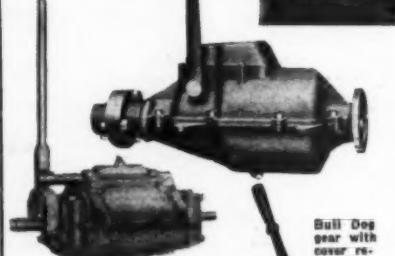
The Gordon reversible propeller, all parts of which are of generous size.

Reversing Devices

The Moore Reverse Switch for reversing 2-cycle engines.



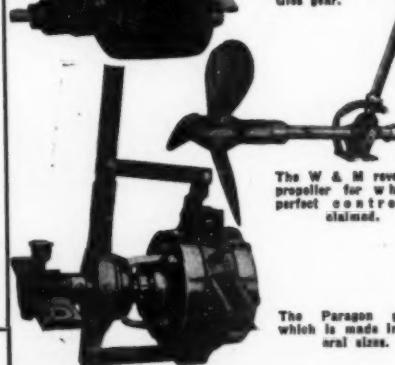
The Baldridge gear which has a handhole for adjustment.



Johnson ball-bearing gear for use with motors up to 30 h.p.



Enclosed type Gies gear.



The Paragon gear which is made in several sizes.

Bull-Dog Reverse Gear.

The Kennedy Machine Company, of Detroit, Mich., manufacture the Bull-Dog reverse gear in four sizes. They have been developing this gear for the last several years and it is designed especially to meet every emergency which is encountered in the most severe service. The gear cage in the Bull-Dog is of such design that excess strain is eliminated, which also makes less strain and torque on the gears. The propeller shaft extends clear through the machine, giving rigidity and perfect alignment. All moving parts are enclosed in an oil-tight case which gives perfect lubrication at all times, and protects the working parts against bilge water.

Columbian foot control for marine reverse gears, to simplify the operation of a runabout.



The Moore Reverse Switch.

The Moore reverse switch, distributed by Grover C. Kirchhof, of 136 Liberty St., New York, is a simple device intended to do away with reversing a two-cycle engine on the spark by guesswork. The switch consists of two separate parts—one attached to the flywheel and the other to the base of the engine. While the engine is running at its normal speed, centrifugal force holds the governor out toward the rim of the flywheel. When the circuit is broken by pulling a chain, the engine begins to slow down, and when it reaches the proper speed to take the advance spark, a coil spring pulls the roller in toward the center, causing it to strike the sliding contact of the switch and close the circuit, which gives the cylinder an explosion just strong enough to reverse the engine.

Paragon Reverse Gears.

The internal construction of Paragon reverse gears consists of a gear keyed to the crankshaft of the engine, surrounded by four or more pinion gears running on studs supported at one end by the cover which is bolted to the external case, and at the other by a bronze pinion support. These pinion gears in turn mesh with the propeller gear which is an internal gear. The forward drive is obtained by a multiple disc clutch, the surfaces of which are formed by the rear end of the propeller gear, a partition in the case and thin plates alternately keyed to the case and to the propeller gear. The reverse motion is obtained by drawing a brake band and keeping the outside case, together with the cover in which are set the studs which support the pinion gears, from revolving, causing these gears to turn in the opposite direction from which the engine is running, and driving the propeller gear also in the reverse direction. These gears are made in several sizes by the Evans Stamping & Plating Co., of Taunton, Mass.

W & M Reversing Propellers.

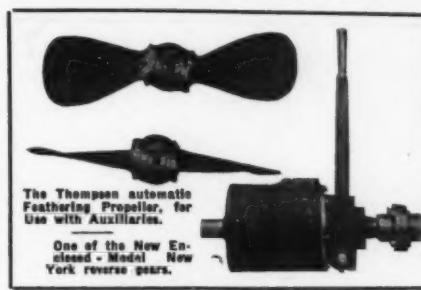
These propellers, manufactured by the Wilmarth and Morman Co., of Grand Rapids, Mich., are made as small as an eight-inch, 2-blade for use in small canoes and dinghies, and as large as six feet in diameter for heavy-duty working boats. The manufacturers state that the blades of their reversing wheels are as strong as those of a solid wheel of equal dimensions but that if the blades become bent they may easily be straightened. If one is broken it may be replaced by simply fitting a new blade, and these wheels are absolutely guaranteed against breakage of hub or shell through the blade striking an obstruction.

Columbian Pedal Reverse Control.

Columbian propellers, and particularly the Ailsa Craig model, manufactured by the Columbian Brass Foundry, of Freeport, L. I., are well known to all motor boatmen. The line is a complete one, made in all sizes and types, including weedless and speed propellers, and right and left hand, and the manufacturers have also paid particularly close attention to the effect of different blade areas, so that it is possible to obtain from them not only a wheel of the desired diameter and pitch, but also practically any blade area required. In addition to their propellers this company is now manufacturing a foot control for marine reverse gears. This device which has been described in this magazine, enables the steersman to operate the reverse gear with his feet in a manner similar to an automobile clutch control.

Thompson Automatic Feathering Propeller.

This propeller, which is made by the Noyes Machine Co., of South Portland, Me., is designed for heavy-duty auxiliaries, and is made of the best manganese bronze obtainable, having no gears, springs or hollow shafts. It is bored, fitted and keyed just like a solid wheel. It is entirely automatic in its action, the blade swinging into the ahead position when the motor is started ahead, into the backing position when the motor is reversed, and into the feathering position when the engine is idle and the boat under headway. This propeller is declared by the makers to be invaluable to auxiliaries, as when the boat is under sail there is no propeller drag to hold her back. It is made in nine different sizes of hub, each with three or more different diameters of blade and with any desired pitch.



Ball Reverse Gears.

The New York Gear Works, of Brooklyn, N. Y., are the makers of a line of marine reverse gears that have been on the market for a good many years. Their line consists of several sizes, all adapted to heavy duty work. The devices are of the planetary type, with a cone clutch for the drive ahead. The shifting lever is in each gear is centered, and the takeup is located in a very accessible place. One of this firm's latest models is an enclosed gear in two sizes: Model F, for 5 to 30 h.p., and Model G, for 8 to 40 h.p. One of the chief features of this gear is the elimination of the brakeband, which sometimes proves a source of annoyance in enclosed gears. Only the fingers are required for adjusting the forward drive, while the reverse mechanism is said to be automatic. This new type of gear, which is provided with an oil-tight case, and has a splash oiling system, is claimed to be an exceedingly efficient piece of machinery.

Electrical Appliances

Henricks Lighting Outfit.

The Henricks Novelty Company, of Indianapolis, Ind., manufacture a lighting outfit for motor boats in which a magneto is used to generate the current, the armature being wound with heavier wire than is the case with their ignition line and running at a speed of about 2,000 r. p. m. Above the armature and in the U formed by the magnets they mount a mechanical automatic circuit-breaker which is operated by a centrifugal governor and this governor maintains the speed of the armature constant, regardless of the speed of the driving member. It will thus be seen that they aim to incorporate all the essential and necessary features for a successful lighting system in compact form in the magneto itself. This outfit, which does not require a switchboard, furnishes current for ignition and 52 c. p. besides. The distribution of candlepower recommended by the company provides for one 20 c. p. searchlight, four 2 c. p. single lights and four 6 c. p. cabin lights.

Leece-Neville Starting and Lighting Systems.

The Leece-Neville Co., of Cleveland, O., have developed two distinct types of starting and lighting systems which are built in several sizes. The single unit type is usually applied to engines rating 30 h. p. and under, running at a maximum speed of from 800 to 1,000 r. p. m. This machine first acts as a motor and cranks the engine and then when the engine is running, it acts as a generator and furnishes current to charge the storage battery. The two-unit system used on larger engines consists of a starting motor used only for cranking the engine and the electric generator which operates continually while the engine is running. These outfits are made of very rugged and substantial material and great ease and certainty of operation is claimed for them.

M. B. S. Specialties.

The Motor Boat Supply Co., of Cleveland, O., in addition to many articles for marine use are laying particular emphasis on their detachable folding seat and their key socket trouble light. Their folding seat is made from $\frac{3}{4}$ " lumber and is upholstered with the best grade of artificial leather. It may be quickly attached to any board or bench and is provided with a strong web handle for carrying. The frame is made of the best selected cold rolled steel, black enameled, and the grab hooks can be fastened to any board or bench from one-half to two inches in thickness. This seat, the back of which is adjusted so that the user may recline in a comfortable position, is sold for \$1.50. The key socket trouble light is made all of brass, and is provided with a 6-volt, 6 c. p. lamp, and this lamp is suitably protected against breakage. The current may be turned on or off at the lamp as required. Ten feet of lamp cord with copper terminals are furnished with this device, which sells for \$2.

The Cosmos Storage Battery.

Cosmos storage batteries are made in several sizes by the Cosmos Electric Co., of 136 Liberty St., New York City. The cells are contained in glass jars, or, by arrangement, in hard rubber jars, and all batteries for four volts and up are fitted into an oak-finished hard wood case with handle. The cover of each cell is sealed by an acid-proof sealing compound, and when the cells are fitted into the case the top of the latter is also properly sealed by the same compound about one inch in thickness. All metal cell connections and terminal posts are enclosed in the sealing compound with the exception of one positive and one negative terminal, and the terminals themselves are of a non-sulphating metal, indestructible by acid. The smallest of this line of accumulator is a 2-volt 12-ampere hour battery weighing five pounds and selling for \$1.85.

Breaznell Clips.

J. H. Breaznell, of 26 Court St., New York City, is the manufacturer of Breaznell clips and terminal connectors for spark plug and battery connections. These are applied and removed without taking the thumb nut off and hold firmly by a self-locking arrangement so that vibration will not loosen them. The terminal connectors are so arranged as to hold the wire end firmly without the use of solder, the wire being looped and placed in position on the connector which is then pressed around it.



Neverout Boat Lighting.

The Rose Mfg. Co., of Philadelphia, Pa., manufacture Neverout searchlights and running lights for use on motor boats and for general marine work. The searchlights are scientifically focused so as to bring every portion of the highly polished parabolic reflector into play. They are wired after this concern's own ideas, designed to make them absolutely weather proof and proof also against short circuit. Their side lights are made in brass, gun metal or nickel-plated finish and are put together entirely without the use of solder. All parts are interchangeable and are easily replaced in case of breakage, while the lamp is readily taken apart for cleaning and for renewing the electric bulb. These lights are made with red or green lights in front and side, the front light being three inches in diameter and powerful enough to be seen at a great distance.

Standard Marine Goods.

The Times Square Automobile Co., of 5th St. and Broadway, New York City, offer several standard articles to the marine trade, among them being motors of well known makes, carburetors, marine reverse gears, gasoline savers, and tools of all descriptions. Their Timesco piston rings are a 45-degree standard type of split ring. They are made on scientific principles of a special quality of gray iron casting which is flexible and durable. They are furnished in all sizes and are stated to improve the power of any engine whether of high or low compression.

G. E. Co.'s Generating Sets.

The General Electric Co., of Schenectady, N. Y., build direct-connected electric generating sets in a variety of sizes, comprising 1, 3, 5, 10 and 25 K. W. The gasoline engine of the 1-K. W. set is of the two-cycle one-cylinder type. It is designed to meet the demand for a small, well-regulated, substantial lighting and power set, and it is constructed of a few parts as are compatible with safety, reliability and strength. The engines of the other sets are all of the four-cylinder four-cycle type, and they operate quietly and with the minimum of attention, while the parts are interchangeable.

Kaufmann's Searchlight.

This searchlight, made by Charles Kaufmann, of Santa Ana, Cal., is mounted on a universal bracket which permits the light to be turned in any direction, and in case of engine trouble it can be taken from the socket and used as a trouble light. It is provided with a six-inch parabolic reflector and is fitted with a screw for focusing the bulb so that a spot light or diffused beam may be obtained as desired. This light which is constructed of the best brass, nickel-plated, is furnished with one of several types of bracket and is sold ready for use for \$7.50.

Reflex Spark Plugs.

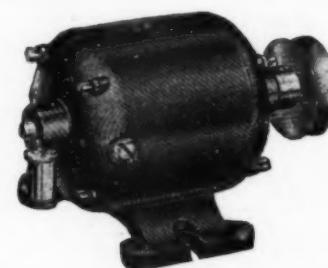
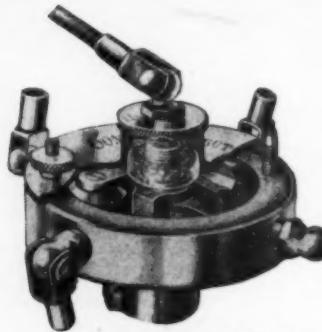
The Reflex Ignition Co., of Cleveland, turn out an exceedingly complete line of spark plugs to meet every requirement of gasoline engine practice. Their Arrow plugs are of the open end type, and they are provided with two spark gaps which give a greater range of adjustment than with the two-point plug. The wire used in this plug is intended for magneto work as it will not fuse or become pitted. The plug is furnished with mica or porcelain insulation, and for use in marine engines where extra length is required to reach through the water jacket and cylinder wall, in the extension type.

Champion J-D Spark Plugs.

Under the terms of the recent merger of the Jeffery-Dewitt Co., of Detroit, Mich., and the Champion Spark Plug Co., of Toledo, O., the latter company will in the future make and market the J-D and Reliance plugs as well as their own Champion plugs, while the former concern will devote its activities exclusively to the manufacture of porcelains and porcelain products. The spark plug shown in the accompanying illustration is constructed with the sparking point of hairlike platinum wire, entirely protected from corrosive action by being baked in and brought flush with the surface of the porcelain insulator. It is claimed that the spark in leaving this minute sparking point is concentrated and intensified to such a degree that the heat generated eliminates any tendency towards short circuit through the formation of carbon.



A low-tension, friction-driven Wizard magneto, made by the Hercules Electric Co.



The Elite dynamo, which delivers at 1,000 r.p.m. 6 volts and 8 amperes.

Wizard Magnets.

The Hercules Electric Co., of Indianapolis, Ind., manufacture three distinct kinds of Wizard magneto. One line consists of oscillating type magneto—low tension instruments for use with engines requiring make and break ignition. The current is generated by oscillating the armature between the pole shoes of the permanent magneto. The second line consists of alternating current gear-driven magneto for marine engines having mechanically operated make and break igniters. The quality of spark delivered by these magneto is such that the manufacturers state that they may be used without the aid of batteries. The third line comprises several instruments of the low tension direct current type driven directly off the flywheel. These magneto are designed for large marine engines where heavy construction and a great amount of current are demanded.

Esterline Lighting System.

The Esterline Co., of Indianapolis, Ind., manufacturers of Golden Glow lamps, are making the Esterline dynamo lighting system in three sizes, differing mainly in the amount of current the dynamo will generate. Each dynamo is mounted on a base which provides means of adjusting the drive, which may be either a bevel-friction pulley or flat-faced belt. The three equipments operate on the same principle—that of floating the battery on the line. With the dynamo at rest the current for the lights is drawn from the battery, and when the dynamo comes up to speed, an automatic cut-out closes, and the current from the dynamo operates the lights and charges the battery. The automatic cut-out used with these equipments is of special design, possessing the feature that it is either positively open or fully closed.

V-Ray Mika Plugs.

The V-Ray Co., of Marshalltown, Iowa, make both porcelain and mica V-ray spark plugs, but regard the Mika of the latter type as more distinctly a marine plug. The core of this plug is made of the best commercial white mica, that has been processed and treated by the manufacturers to a point where it is guaranteed impervious to heat and oil. In the course of the treatment of the mica any traces of iron deposit contained therein are withdrawn by magnetic means. The electrode is of meteor wire, and is stated to be absolutely proof against fusing or other disintegration. The terminal cap on this plug is designed to fit any cable terminal.

LBA Storage Batteries.

The latest improvement to LBA storage batteries which are made in many sizes by the Willard Storage Battery Co., of Cleveland, Ohio, consists of a tapered bolt connector, which makes the batteries self-contained, and also renders it possible to connect wiring direct to the batteries. This tapered connector, which is lead-covered, fits into a finished tapered socket, lead welded to the terminal post of the battery. The tapered joint, it is stated, insures a connection which will never work loose from any cause, and the lead covering of the complete connector insures a non-corrosive job. Connectors are non-interchangeable, so that it is impossible to attach the positive connector to the negative terminal or vice versa. The Willard people pay a great deal of attention to laboratory testing, all raw materials being carefully analyzed by experts, and each battery being finally inspected and tested before shipment.

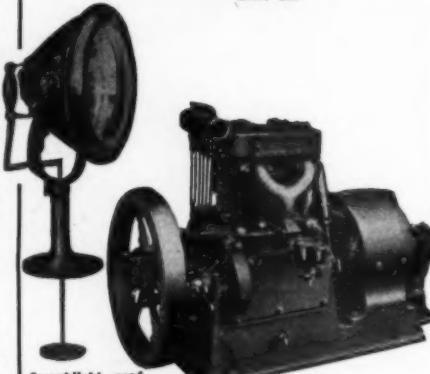
Hi-Po Batteries and Connectors.

The Hi-Po Waterproof Battery Co., of 1007 Atlantic Ave., Brooklyn, N. Y., make the Hi-Po spring connector and terminal for use on magneto, coils, spark plugs, horns, batteries, etc. These connectors are self-locking, being fastened without pliers and without solder to the ends of wires by a patent tie making a perfect electrical connection which it is said cannot possibly jar loose. The most famous product of this company's factory, however, is the Hi-Po waterproof battery. These batteries are insulated against short-circuit from water or moisture and are protected against heat and cold. It is stated that they are positively as safe against short-circuits as the best insulated wire, and for demonstration purposes some of them have stood the test immersed in water for over a year.

Connecticut Electrical Appliances.

The Connecticut Telephone & Electric Co., of Meriden, Conn., whose Plug-Coil and Connecticut timers are well known to motor boatmen, also manufacture several lighting appliances for motor boat use. These consist of selector switches, dimming switches and other wire fittings as well as dash lamps and trouble lamps. Their Connecticut trouble lamp is made up in a substantial manner with a solid brass reflector heavily nickelated and polished and with pro-

The well-known Connecticut timer, manufactured by the Conn. Tel. & Elec. Co.



No. 2 generating set, made by the Carlisle & Finch Co.



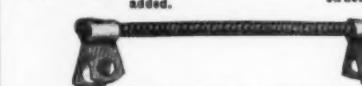
The Mika V-ray plug.



L.B.A. storage battery, to which important improvements have been added.



Sootless plug, which is said to be indestructible.



An Edison 8-Cell primary battery, having constant voltage and long ampere-hour capacity.

tecting wire guards so arranged that it may be collapsed for the removal or insertion of a lamp. This trouble lamp is fitted with a rubberoid handle and ten feet of duplex cord with Ediswan attaching plug. Packed in a tubular case with screw cover, it costs \$1.25.

The Elite Dynamo.

E. A. Gardner, of Rochester, N. Y., is pushing the Elite dynamo, a compact little instrument weighing 9 1/2 lbs. and delivering at the normal speed of 1,800 r. p. m., 6 volts and 8 amperes. The dynamo is fitted with wick feed oilers, and it is stated that it will run for hours without heating. The case is entirely enclosed; it is made of white metal and will not rust. Finished in black enamel this dynamo, which delivers 48 c. p., sells for \$15. Mr. Gardner also handles the Dyneto-Entz starting and lighting system, as well as many practical necessities for motor boatmen.

Carlisle-Finch Lighting Outfits.

The Carlisle & Finch Co., of Cincinnati, O., in addition to their extensive line of searchlight projectors for use on large craft, offer lighting outfits suitable for use in motor boats. These may be obtained as complete systems, or batteries, switchboards or dynamos may be purchased singly. Their No. 2 generating set is a direct-connected unit, delivering 110 volts at 26 amperes. This engine and dynamo can be used to charge storage batteries or to run lights direct for lighting the cabin and other parts of the boat and for operating an arc searchlight. The set is provided with a sensitive governor which keeps the voltage very even from no load to full load. The outfit, which will light 100 tungsten lamps of 16 c. p. each is listed at \$650.

K-W "Special" Magneto.

The same materials and workmanship used on the regular K-W products are employed in the "Special" magneto manufactured by the K-W Ignition Co., of Cleveland, O. This magneto embodies all the well-known K-W features, having no commutator, no brushes, and no sliding contacts. The only moving part is the rotor, which swings perfectly free supported by high-grade ball bearings. The current is generated in the winding of flat copper ribbon, which stands perfectly still and goes direct from the winding to the binding post at the end of the magneto. This instrument is designed for use with the K-W searchlight providing 20 c. p. in addition to supplying the ignition current. Belt drive from the flywheel with pulley for one one-inch flat belt is recommended for this magneto.

Packard Protected Cable.

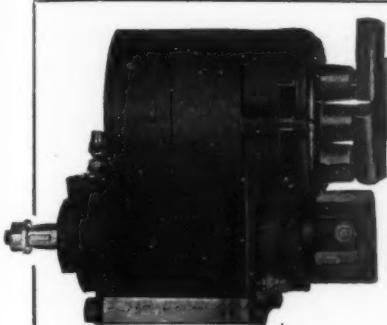
Packard cable is made by the Packard Electric Co., of Warren, O., in 28 distinct styles and sizes. The different types of this cable are designed especially for ignition, for lighting and for starting work, but all styles have one important distinguishing feature, namely, a flexible coating of enamel with which the two linen braids are saturated. It is stated that this enamel not only seals up the pores against the entrance of oil and dirt, but also protects the rubber insulation from the vulcanizing effects of the heat from the engine, and therefore greatly increases the life of the cable. This enamel coating with which Packard cable is saturated is stated to be absolutely oil-proof, and, in fact, all Packard cable is sold under a guarantee that it is entirely proof against oil.

Sootless Spark Plugs.

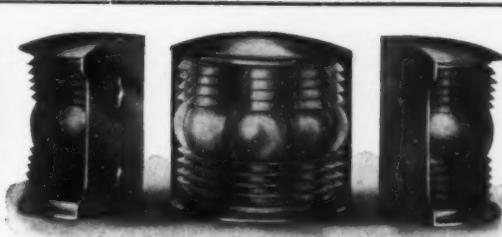
In the manufacture of Sootless plugs, the manufacturers, the Oakes & Dow Co., of Boston, Mass., have endeavored to combine all the good features of their open end and closed end Comet plugs in one, and add thereto additional merits. The engine end of the plug is protected with an additional capping of porcelain, so arranged and enclosed as to obviate the possibility of breakage. This plug has a double explosion chamber, with the sparking points extended well into the mixture, giving an extra hot spark just where it is most needed for a perfect explosion. Sootless plugs are stated to be indestructible and leak-proof. They are sold in all standard sizes, at \$1.50 each.

Edison Primary Batteries.

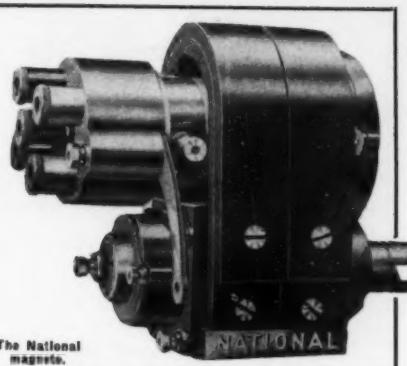
Edison primary batteries are recommended by the makers, Thomas A. Edison, Inc., of Orange, N. J., as being of long ampere-hour capacity and constant voltage. It is stated that their reliability insures ample battery energy for at least a full season's use under ordinary conditions and for a much longer period when used intermittently for comparatively short periods. They do not deteriorate while idle and when run down may be refilled with little trouble. In addition to providing current for ignition, one of their six cell batteries, as shown in the accompanying illustration, will run three four-volt 2 c. p. Mazda lamps for bow and running lights and a 2 c. p. trouble lamp may be used in addition to the above for intermittent service.



Model H Kingston magneto of the dual type.



Geo. P. Carpenter & Co.'s new set of running lights.



The National magneto.

Model H Kingston Magneto

The Model H magneto manufactured by the Kokomo Electric Co., of Kokomo, Ind., is of the dual system type, being designed so that batteries may be used for starting, if desired. Batteries are not needed, however, as it is stated that this magneto will start and run an engine entirely independent of them. The magneto is made from the best materials obtainable and all machine work is done by highly paid mechanics. It is furnished for 2, 3, 4 and 6-cylinder engines, and the manufacturers state that in ordering one of their magnetos it is necessary to give as much information regarding the engine on which it is to be used as is possible—especially the direction in which the magneto should rotate.

The North East Lighting System

The North East electric lighting and starting system manufactured by the North East Electric Co., of Rochester, N. Y., comprises a motor-generator, starting switch, lock switch and battery. The motor-generator is small and compact and has only one moving part—the armature, which is mounted in annular ball bearings of an improved type. The starting switch is a neatly designed instrument in which it is never required to break any main line circuits, consequently freeing it from contact troubles. The battery is always charged and discharged in series and it is never charged or discharged at an abnormal rate. One of the features of this system is the gear arrangement which automatically gives the proper gear ratio between the motor-generator and engine, both for starting and running.

Rajah Plugs and Hood.

The Rajah Auto-Supply Co., of Bloomfield, N. J., call particular attention to their Giant spark plug which is adapted for use in marine work where plugs are subjected to harder service than under other conditions. This plug is large and strong in both the porcelain and metal parts, and was originally designed for racing purposes. It is made in $\frac{1}{2}$ -inch and $\frac{3}{8}$ -inch sizes only. Only the highest grade of imported porcelain and electrodes obtainable are used in the manufacture of Rajah plugs. Of interest also to motor boatmen is this company's spark plug hood, the main portion of which is made of porcelain, which completely covers the spark plug and has a neck on one side recessed to permit the introduction of the Rajah clip terminal. A rubber nipple covers a portion of the secondary wire and the ferrule end of the terminal.

Smile Generators.

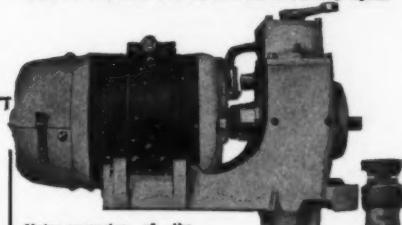
These generators, built by R. S. Mills, of 136 Liberty Street, New York City, are thoroughly and substantially constructed of the highest grade materials. Their commutators and brushes are large to insure against heat and the bearings have the latest oiling devices. All parts are easily accessible. These machines are supplied with a belt pulley of the required size to get their proper speed from an engine. The No. 1 generator for use with a 6-volt lighting system delivers 10 volts and 8 amperes at 1,700 r.p.m. and sells for \$23. The No. 2 generator for use on a 12-volt system, delivers 15 volts and 15 amperes at 1,500 r.p.m. and lists at \$48. Mr. Mills also manufactures storage batteries, switchboards, engine-room telegraphs, etc.

Cello Lighting Specialties.

The A. S. Campbell Co., of Boston, Mass., make a number of high-grade but reasonably priced searchlights for marine use, as well as cabin lights, trouble lights, and complete lighting systems. One of their Cello specialties which has proven extremely popular is their Wireless searchlight. This searchlight is constructed without wires to work loose and short circuit. The connection to the batteries is made through the highly-polished flush deck socket, and when the light is not in use the deck socket is covered by a screw cap, so that there is no possibility of water finding its way in to make trouble. This light is strongly built, is very flexible, giving any angle desired and is especially adapted for finding moving buoys, winding channels, etc. Furnished in polished brass, bright nickel, or black nickel finish it is sold for \$7.50.

Carpenter Motor Boat Lights.

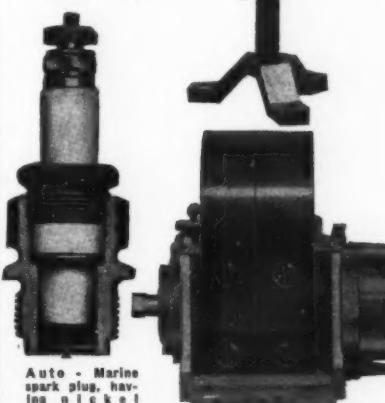
Geo. B. Carpenter & Co., of Chicago, Ill., are coming out with several new marine accessories this year, including a searchlight control, canoe searchlight, and other useful articles. Their running lights for Class 2 boats make a very attractive outfit. The body of each lamp is made with keyhole slots to fit over round head screws to be attached to the coaming or light boxes. Removal of two screws releases the bottom of the light so that the lens or bulb can be replaced if broken. The three lamps of this outfit—namely, port and starboard lights, and bow light, are fitted with triplex lenses, 6-volt tungsten bulbs, and are wired for use.



Motor-generator of the North East starting and lighting system.



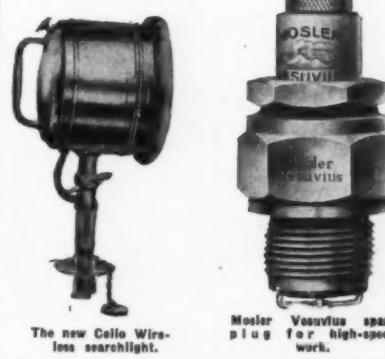
The Miller porcelain spark plug.



The Elkhart, a reversible magneto, for outboard motors.



The Auto-Marine spark plug, having nickel points.



The new Cello Wireless searchlight.

Mosler Vesuvius spark plug for high-speed work.

National Magnetos.

National magnetos, manufactured by the National Cell Co., of Lansing, Mich., are all of the low tension type, the entire available space on the armature being occupied by the primary or generating winding. The high tension current is induced in a separate transformer coil located on a bracket mounted near the magneto. This practice, the makers point out, permits the use of more than the average number of turns of primary current wire on the armature, increasing the voltage output proportionately. National magnetos are claimed to decrease fuel consumption because of the hot spark given, which insures perfect ignition. Type R is the latest model of this line; it is small and light, and it is especially designed for use on small high speed marine engines.

The Miller Porcelain Plug.

One of the best-known of Miller's accessories is the Miller porcelain spark plug, which is delivered to any part of the world by parcel post for 50 cents. This plug is of the double air chamber type, and is put together in such a simple manner that it can be taken apart, cleaned, and put together again in a moment's time. The porcelain is made from selected foreign stock, and is guaranteed to be heat-proof. This plug is made in all standard sizes by Chas. E. Miller, of 97 Reade street, New York City, who deals also in all kinds of standard supplies and accessories for motor boatmen.

Sprague-Brace Searchlight.

An attractive and efficient little searchlight, having spun brass reflector, plated with pure silver and highly polished, is manufactured by the Sprague-Brace Mfg. Co., of Detroit, Mich. This lamp, which sells for \$5, is made with a full swivel movement so that the light may be thrown in any direction, while it is fitted with a positive locking device. The regular equipment of this searchlight consists of an on-and-off switch, incorporated in the lamp, and a 4 c. p. 6-volt bulb. It will project a clear ray of light 200 feet ahead, and it may be run off five dry cells or any 6-volt storage battery.

Auto-Marine Spark Plug.

German porcelain of the best quality, and nickel sparking points are used in the construction of this plug, which is manufactured by the Auto-Marine Supply Co., of Atlantic City, N. J. The makers state that it is only owing to the large number of plugs manufactured that they are able to offer the Auto-Marine at the price of 50 cents. The base of the plug provides electrodes so positioned that they present a round surface to the action of the spark, eliminating, it is said, pitting of the electrodes, thereby prolonging their life, and producing a uniform spark at all times.

The Elkhart Outboard Motor Magneto.

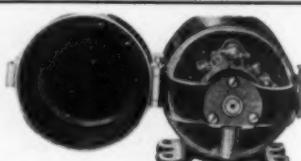
The latest magneto to be produced by the Elkhart Manufacturing Co., of Monroe, Mich., is their model HBR, which is a high tension instrument of the reversible type for detachable rowboat motors. This magneto is changed from clockwise to counter clockwise rotation by merely shifting the timing lever. This type of magneto must be gear driven and must be timed with the engine. The gears are marked so that if it should be necessary to remove the magneto from the engine it can be reinstalled without any difficulty. Only one adjustment need ever be made to this instrument and this merely consists of screwing in the platinum to compensate normal wear of the contact points.

A New Battery and Coil Box.

Spencer, Hartlieb & Co., Cincinnati, Ohio, dealers in motors, motor boats and accessories, will shortly place on the market an article which they claim will be a great boon to the operator of a small single-cylinder engine in an open boat. This will consist of an oak box with spring compression lid and five compartments inside, four of which contain regulation dry cells, and the fifth a special coil made to operate and give full efficiency on four cells. This outfit which, it is claimed, will give great economy in dry cell expenditure, will be sold for \$5.75.

Mosler Plugs.

Three of the leaders of A. R. Mosler & Co., of Mt. Vernon, N. Y., are their Vesuvius, Spitfire and Superior spark plugs. The Superior is a \$1 plug with long shank designed to meet the requirements of such engines as have especially deep water jackets, and the Vesuvius is a plug of particularly heavy construction, with static insulation, intended for use where high speed or heavy work sends the temperature up. The cost is \$2. The Spitfire is an aluminum-pointed plug especially designed for use with magnetos. This plug sells for \$1.25 in the half-inch thread and \$1.50 with $\frac{1}{4}$ -inch thread.



End view of the Apelco Model B-1 dynamo.

Apelco Lighting Systems.

The **Apple Electric Co.**, of Dayton, O., manufacture a line of lighting systems for motor boats, consisting of the B-1 system for boats up to 25 feet in length, the B-2 for boats of from 25 to 40 feet, and the B-3 for boats of from 40 to 65 feet in length, as well as cabin lamps, hand lamps, searchlights, etc. The smallest of the lighting systems, the B-1, is composed of a 5-ampere dynamo, indicating automatic switch, and a 6-volt 60-ampere hour battery. The dynamo is rated at 6 volts and will deliver its rated output when driven at a speed approximating 1,500 r. p. m. It may be driven by friction or belt as desired. This system will supply 30 candlepower of light in addition to ignition for the engine, and this candlepower may be distributed as follows: one 6 c. p. bulb in combination running lamp, one 4 c. p. globe in riding light, and one 20 c. p. searchlight. The cost of the outfit is \$45. complete.

Heinze Electrical Apparatus.

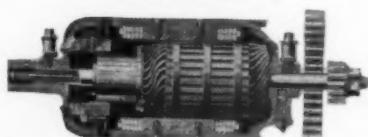
The **Heinze Electric Co.**, of Detroit, Mich., manufacture several types of coils, magnetos, switches, spark plugs and timers for marine use. Their switches are made of a molded composition, handsomely finished, and simple and durable in construction. The rosette switch shown in the accompanying illustration can be changed to the kick-switch type without altering the base or interior wiring. This switch is made to operate two sets of batteries independently or magneto and battery, as the case may require. By removing the small switch plug when on position marked "Off," the switch is locked and the engine cannot be started until the plug is again inserted, the fixed bushing preventing the switch from being operated by means of a screw-driver or other implement.

The Hipcoscope.

The **Hipwell Mfg. Co.**, of Pittsburgh, Pa., are producing a long range flashlight known as the Hipcoscope, a feature of which is the use of two magnifying lenses adjusted to focus which throw a beam of light approximately 200 feet. The component parts



Heinze rosette switch which may be converted to a kick switch without rewiring.



Sectional view of the Bosch-Rushmore fly-wheel type electric starter.



The Hipcoscope, a long range flash-light.

of this light are contained in a vulcanized fibre case which measures 10 1/2 x 1 1/2 inches, the trimmings are of nickel, and a positive lock switch is provided. The weight, including batteries, is 18 oz., and the price complete is \$3. A smaller size, embodying the same features, and measuring 6 x 1 1/4 inches costs \$1.75. Renewal batteries cost 40 and 30 cents respectively.

The Bosch-Rushmore Starter.

The recent Bosch-Rushmore merger added to the line of the **Bosch Magneto Co.**, of New York City, the well-known Rushmore flywheel type self-cranker. This starter, made in 6 and 12-volt styles, does not engage with the flywheel except while it is being used for cranking. A compression spring in the commutator end of the electric motor shaft holds the armature out of line with the pole pieces, until by the closing of the switch the armature is drawn in by magnetic attraction, bringing the pinion into mesh with the flywheel gear. When the gasoline engine takes up its cycle the motor is relieved of its load, the current dropping close to zero and allowing the compression spring to force the pinion out of mesh. The starter is claimed to have sufficient power to turn the heaviest marine motors, and to use extremely little current for the amount of work done.

Mea Magneto.

Marburg Bros., Inc., of 1790 Broadway, New York City, have made Mea magnetos for many years. Their most recent types all have stationary housings which are seamless and which entirely enclose all the vital parts, including the shifting bell-shaped magnets. Mea magnetos have their bell-shaped magnets placed horizontally in the same axis with the armature, making possible the simultaneous advance and retard of magnets and breaker instead of the advance and retard of the timer or breaker alone. Thus the relative position of armature and field at the moment of sparking is absolutely maintained, and the same quality of spark is produced no matter what the timing may be. This magneto is claimed to increase flexibility and efficiency of the motor. This company also produces the well-known SRO ball bearings.



The Mea magneto, which is claimed to increase the flexibility and the efficiency of any motor.

General Accessories

Hyde Wheels.

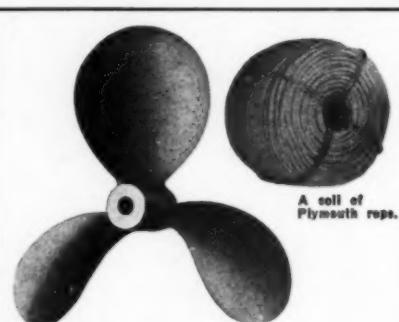
The **Hyde Windlass Company**, of Bath, Me., use manganese bronze, Government tested, and of the highest tensile strength, exclusively in their propellers. All Hyde propellers are made from metal patterns accurately balanced, are hand filed to remove all surface inequalities, and are then polished. Within a short time this company anticipates putting on the market a new propeller, called the Hyde No-Weed, this propeller, of course, being for use in such waters as those of the South where considerable difficulty is experienced from the presence of weeds in the water.

Jeffery's Paying Ladle.

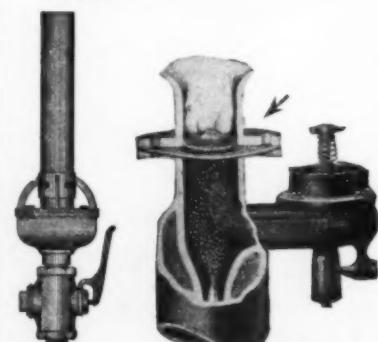
L. W. Ferdinand & Co., of Boston, Mass., whose Jeffery's marine glue and varnishes are well known to the marine trade, are now offering Jeffery's patent combined melting pot and paying ladle, by which, it is said, an inexperienced workman can pay a deck as well as an old hand, and run the glue into the seams without fear of injuring it. This device consists of a kerosene pressure torch, a glue pot, and a paying ladle, the whole being mounted on wheels so that it may be readily drawn along the seam, and being provided with a regulating device to control the flow of the liquid glue. When the glue is heated to the proper temperature the outlet is placed over the seam to be payed and the operator draws the apparatus along at such a pace that the glue will just fill the seams, leaving little to be scraped off. To obtain full advantage of this ladle, the seams should be caulked in as long lengths as possible, and the outfit should never be used until at least 100 feet of seam are caulked and ready for paying.

Holman Air Whistle.

The Holman air whistle, for which a number of new points are claimed, is manufactured by E. E. Gross, of Stockton, Cal. The resounding bell of this whistle is designed to protect the port from outside air influence, and is also adjustable to regulate the pitch, so that it may be made to give any invariable sound desired. It is pointed out by the maker that a steady sound is of great advantage when the traffic is congested, or when it is desirable to attract the attention of a bridge tender above a multitude of other noises. The whistle is simply constructed, can be adjusted to any air pressure, and its sound carries for a great distance. The chief advantage claimed for it, however, is that only four pounds of air are consumed at one blast. The cost is \$7.50, complete.



A Hyde manganese bronze propeller.



The S-P vaporizer, which is designed to prevent backfire and increase efficiency.

Plymouth Products.

The **Plymouth Cordage Co.**, of North Plymouth, Mass., manufacture all styles and sizes of ropes for marine and other usage. Their Plymouth Manila Bolt Rope, Bolt Rope Stock, and Selected Yarns are three special grades which are more durable and are made from 10 to 15 per cent. stronger than their regular Manila product. The terms given these ropes are descriptive of the quality of the fibre only—the particular lay and type of construction depends upon the work for which the rope is intended. Unless otherwise stated, these ropes are furnished with a soft lay and in three-strand construction. Owing to the greater proportionate strength of these goods, it is pointed out that they are of special advantage on yachts and motor boats, where storage space for anchor and other lines is somewhat limited.

The S-P Vaporizer.

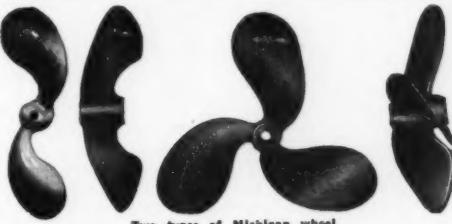
The S-P Vaporizer is designed to prevent backfire and increase the efficiency of any motor to which it is applied. Installed between the carburetor and intake manifold, this vaporizer is constructed of a double wire gauze in the shape of a dome. The upper layer of wire takes off the pressure of backfire and the lower layer insures constant protection. An asbestos composition absorbent ball between these layers of wire is stated to guarantee a constant presence of vapor. This vaporizer is made in five standard sizes to fit all makes of engines and is sold for \$3. It is manufactured by the **S-P Vaporizer Company, Inc.**, of 125 East 23rd Street, New York City.

Bolinders Marine Engines.

W. R. Haynie, of 30 Church St., New York City, is the American representative of the **Bolinders Company**, of Stockholm, Sweden, which company produces a very extensive line of Bolinders marine oil engines. In the single-cylinder type these motors are made in sizes from 5 to 80 h. p., and this series is carried through in twice the horsepower in the double-cylinder machines. In the four-cylinder model there are five sizes. These motors all burn refined petroleum or fuel oil. Bolinders motors have recently been installed in the tugboat *Marie L. Hanson* and the pilot boat *Gracie S.*, both plying San Francisco Harbor, the power in the latter being 120 h. p. and in the other 160 h. p., and in matters of reliability and economy are stated to have fully lived up to the maker's guarantee.



The simple and reliable Clark flexible coupling.



Two types of Michigan wheel.



Sands "Knockabout" marine toilet.

Clark Flexible Coupling.

The Clark flexible coupling is a strong, compact device for connecting motor boat propellers, and consists simply of two sprocket-cut hubs held flexibly together by a roller chain. Connection is effected in a moment's time by clasping the chain with a master link, and the shafts may be freed by simply removing the chain. The makers, the Clark Flexible Coupling Co., of 90 West St., New York City, state that this coupling is noiseless, unlimited in speed and not affected by moisture. It is made in cast iron or steel with a safety factor of seven, and in a range of sizes capable of holding any installation of power in a motor boat or motor yacht.

Kingston Carbureters.

Model Y Kingston carbureters are made by Byrne, Kingston & Co., of Kokomo, Ind., in 7 sizes from 1-inch to 3-inch. With this type, all air entering the carbureter is taken from a common source, the air inlet being so located as to make it convenient for the attachment of fittings for the conducting of warm air to this point. The main supply of air passes directly over the spray nozzle, causing a finely vaporized fuel mixture, and the supplemental supply is taken into the mixing chamber of the carbureter where it becomes thoroughly impregnated with gasoline vapor. This carbureter, which has a special provision for easy starting, requires no changes for various speeds after the initial adjustment. The Enclosed Pattern Kingston, illustrated in this section, is made by this company in standard sizes.

Edson Steering Wheels and Gears.

The Edson Mfg. Co., of Boston, Mass., produce many types of steering wheels and combination steerers. The wheel shown in the accompanying illustration is a wood wheel made up of well-seasoned stock and put together by skilled workmen with brass screws and screw heads capped with white holly plugs. The hub is of polished brass. A great choice of woods is offered with this wheel, and it can be furnished all in mahogany, with mahogany rim and teak spokes or handles, or with mahogany rim and fellos with rosewood spokes and handles, as well as with white holly inlay ribbons. Edson combination steerers are made with polished cast brass stand, containing mitre gears, the motion being transmitted to the rudder by rack and pinion. Compass and binnacle are mounted behind the wheel, or the steerer may be obtained without these fittings.

Samson Tiller Rope.

The Samson Cordage Works, of Boston, Mass., make, in addition to sash cord, braided rope, signal cord, and rope couplings, grips, etc., a bronze-cord tiller rope which they recommend for its reliability, durability and freedom from stretch. A special phosphor bronze wire cable is used for the center, and a cover of fine cotton yarn, mahogany colored, is braided evenly over the wire. This is smoothly finished and treated to render it waterproof. Samson tiller rope is made in 3/4-inch, 5/16, and 3/8-inch diameter, sizes costing 3 1/2, 5 and 6 1/2 cents per foot respectively.

Michigan Wheels.

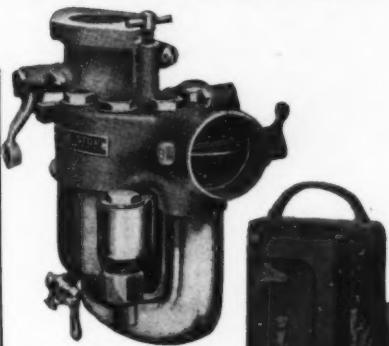
Although the Michigan Wheel Co., of Grand Rapids, Mich., makes an extended line of marine goods, perhaps their most famous product is the Michigan wheel. These propeller wheels are made in speed, weedless, towing and cruising types, both two and three-bladed, and are manufactured from the very best quality of bronze, every wheel being balanced by a special machine, then highly polished and lacquered. The bronze employed in these wheels is a special propeller composition made from Michigan copper and India tin. This bronze can be bent and straightened cold and should never be heated. Other articles manufactured by this company include their well-known reverse gears, reversible propellers, underwater exhausts, power bilge pumps, etc.

New Jersey Paints.

The New Jersey Paint Works, of Jersey City, N. J., make a full line of marine paints for exterior and interior work. Some of the best known paints of their line are Sargasso Green, a bright, strong non-fouling composition for boat bottoms, which can be applied on wood or iron, and their deck and floor paints which are provided in every color and which dry hard in 12 hours.

New Spark Coils.

Bruns, Kimball & Co., of 115 Liberty St., New York City, are putting out a high-grade spark coil of the jump spark type at moderate price, \$3.50 being the cost of a unit of the open type, and \$4 the charge for a unit of the closed type. A switch is furnished for 25 cents extra. In addition to this coil they have a make and break spark coil enclosed in a brass case which is offered for \$2.25. This coil is said to be practically indestructible and to give a very hot spark.



The new Enclosed Pattern Kingston carbureter.

The Tourist Multiple camera.



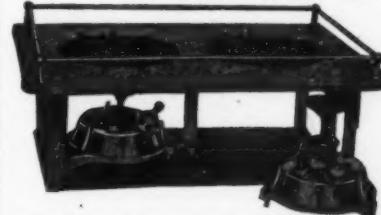
Edson steering wheel, which is made in several kinds of wood.



The safety device used on Joe's rear starter.



The Wicker-Kraft life-preserver chair.



Juwel 2-burner stove, showing the new Schleicher swinging brackets.

Sands Sanitary Plumbing Fixtures.

A. B. Sands & Son Co., of 22-24 Vesey street, New York City, have for years made a study of sanitary engineering as applied to marine use, and their line includes an assortment of water closets fitted with pumps for use below the water line, and with tanks or flush valves for above-waterline use, folding and stationary lavatories, bathtubs, galley fixtures, pumps for all marine uses, and many other accessories. The closet shown in the accompanying illustration is fitted with a 2 1/2-inch composition supply and waste pump which is easy-acting and reliable, the supply being controlled by the Sands patent foot valve. It is fitted with a vitro-adamant hopper bowl with oak seat and cover. The cost of this "Knockabout" type is \$49. A new fixture made by this company is a pump water closet operated by an electric motor, which may be installed on any boat having electric current.

Photographic Incidents.

When planning that cruise a good photographic outfit is a practical necessity, and Herbert & Huesgen, of 311 Madison Ave., New York City, make it their business to supply voyageurs with whatever they need in this line. Their latest camera is the Tourist Multiple Camera which uses a moving picture film and takes 750 exposures on one film. By using this camera it is possible to secure a complete and consecutive record of a cruise, and the cost of the film is so little that many objects and subjects may be snapped which would otherwise be omitted. This camera is fitted with an extremely fast lens, so that pictures may be taken in a poor light, and the film winding mechanism is so arranged that one movement of a lever sets it for a new picture. The price has recently been reduced from \$175 to \$125.

Bridgeport Bronze.

This paint, manufactured by the Bridgeport Marine Paint Co., of Bridgeport, Conn., is intended for use on the under-bodies of motor boats and sailing craft. Its non-fouling properties are such that the claim is made that it is unnecessary during the summer to haul out a boat or even clean off any bottom to which it has been applied, since barnacles will not become attached to any surface covered with it.

Thomas Spray Hoods.

The W. E. Thomas Co., of 42 South street, New York City, manufacture a very complete line of spray hoods, tops, awnings for boat and other canvas specialties. They are also able to fit out jury sail rigs, and, in fact, a large part of their business consists of sail making for large and small boats. Their spray hoods are mounted with brass bows, are equipped with brass fittings, and are covered with the best government grade khaki. Especially made spray curtains can be made from specifications by this company.

Joe's Rear Starter.

The Snow & Petrelli Co., of New Haven, Conn., most widely known as the manufacturers of Joe's reverse gear, also produce Joe's rear starter, for marine engines, in two sizes. Several features of this gear may be enumerated as follows: The chain does not run except when cranking; the pawl is thrown in and out by positive motion, and does not depend on springs or gravity to hold it in; it is protected from the weather by being completely enclosed, and it has a tight lubrication chamber. Noiselessness is attained by having the pawl held out of contact when the engine is running. Joe's starter is furnished with or without a safety device, and the plain type may be used on engines running in either direction. When fitted with the safety device, however, it may be used only in one direction, as specified by the purchaser.

Wicker-Kraft Furniture.

The products of the Wicker-Kraft Co., of Newburgh, N. Y., are light in weight, comfortable and durable and are made waterproof as nearly as possible by finishing with spar varnish. Moreover they are inexpensive although built from the finest materials by expert workmen. Wicker-Kraft chairs are made in a great variety of styles for use in any location desired. Some are made with no legs for use in fixed benches. This company's life preserver chairs are constructed with a rack beneath the seat on which to stow regulation life belts. This device enables one to have the belts at all times handy where they occupy no extra room and where they can be kept clean.

Juwel-Schleicher Stoves.

The Globe Gas Light Co., of Boston, Mass., have introduced a recent improvement in the mounting of their Juwel kerosene vapor oil stoves which makes for increased cleanliness and ease of operation. This improvement consists of the adoption of the Schleicher patent brackets which fit into the stove frame with the single-burner stoves in them. The brackets are hinged and while normally locked in position may be readily swung out to facilitate lighting the stoves or cleaning the frame. The two Juwel 6-A stove fitted with Schleicher brackets, which is shown in the accompanying illustration, costs \$16.50.

Epicassit, an Anti-Corrosive.

Epicassit is an imported material recently introduced to this country which serves to protect metal against corrosion. It consists of pure tin powder reduced to dust mixed with a liquid deoxidizer to the consistency of thick paint. It is recommended by the distributors, Hess & Son, of Philadelphia, Pa., for use with articles of any size which it is convenient to dismantle and send to a dipping plant, and it may also be applied to locally damaged places. Thus, articles of steel, wrought iron, cast iron, copper, brass, etc., may be tinned without dismantling or moving. The metal surface to be tinned should be carefully cleaned, painted with Epicassit, and then heated by any suitable means, as over a charcoal fire, or with a powerful blow torch, to the melting point of the metal. It is claimed that this tin coating can be applied to vertical and even inverted surfaces.

Rich Tungsten Valves.

The Rich Tool Co., of Chicago, Ill., manufacture Rich Tungsten valves in all sizes to fit any engine. They are made of a dense, tough tungsten alloy steel which retains its hardness and toughness at temperatures far above those attained in engine cylinders. They are formed in one piece and are then put through a process which, it is stated, while not hardening the metal excessively, gives to it a toughness which will resist warping and pitting at temperatures approximately 500 degrees above those ordinarily reached in engine cylinders. Power gains and freedom from trouble are the principal advantages claimed for these valves.

Universal Ilanisilk Life Preservers.

Lieut. S. P. Edmonds, of the U. S. Revenue Cutter Service, Ret'd, has in the past few years, developed a system of useful and ornamental life preservers. These are manufactured under his supervision by the Robinson-Roders Co., of Newark, N. J., under the name of Universal Ilanisilk Life Preservers. The various forms of these preservers include those adapted for seat cushions, chair cushions, pillows for bunks, etc. It is stated that their efficiency lies in the ease with which they may be put on, their reliability in remaining adjusted and the security with which they hold the wearer's head above water even though he may be exhausted or unconscious. They are light and comfortable, and being of strong khaki duck or artificial leather, will last for years. One form has been designed especially for use by aviators and speed-boatmen. This is worn as a jacket in place of the ordinary coat.

The Krice Carburetor.

This carburetor, which is manufactured by the Krice Carburetor Company, of Detroit, Mich., differs chiefly from other carburetors in that it has no needle valve, the gasoline being sucked into the mixing chamber through a narrow annular opening and being drawn up the wall of the mixing chamber by capillary attraction. The company states that by this method the gas is vaporized very quickly into a much drier form than when an ordinary needle valve is used. This instrument is claimed to develop greatly increased power in any engine, to be extremely flexible and to throttle very closely.

B. & B. Speed Wheels.

Bryant & Berry Company, of Detroit, Mich., make their B. & B. speed wheels with blades having a differential pitch and a concave curve from the hub to the edge of the blade. The outside driving edges are at least seven degrees aft of the forward face of the hub. The object of this construction is to lessen the possibility of forming an air pocket on the forward side of the wheel, reducing the percentage of slip and make the driving side of the wheels work all the time. This concern's latest product, a weed-cutting reversible propeller, is stated to attain practically the same speed as is made with the B. & B. solid type. The hub is constructed in such a manner as to free itself automatically of any weeds it may encounter.

The Kramer Governor.

The Kramer governor, manufactured by the Kramer Governor Co., of Detroit, Mich., is a compact self-contained unit which has no connection to any moving part of the engine. It is connected directly above the carburetor and the speed of the ingoing gases is utilized as the motive power for operating the disc or control member which floats in the path of the gas. This disc is therefore subjected instantaneously to any changes in the speed of the gases which, in turn, are dependent on the engine speeds. Since the throttle is connected to the operating disc it is opened upon application of additional loads at the psychological time and speed. This condition prevents jerkiness in the admission of fuel and not only performs the function of speed regulation but, it is stated, gives great assistance to the carburetor in vaporizing the gasoline.

Trimount Rotary Power Pumps.

These pumps are constructed by the Trimount Rotary Power Co., of Boston, Mass., and operate on the rotary principle. Owing to their peculiar construction the parts are few and simple, thus reducing friction and wear to a minimum. When wear does occur, it is readily taken up. The bilge pump shown in the accompanying illustration is made of bronze throughout in three sizes, pumping respectively six, ten and twenty gallons per minute.

Non-Fluid-Oil and Motorol.

These two oils are produced by the New York & New Jersey Lubricating Co., of New York City, and the refiners point out that their success when used with marine engines of all types for the past ten years is ample guarantee of their quality. Motorol is an oil which may be used with exceptional economy, as it has great heat resisting properties, viscosity and body. It is put up in 1 and 5-gallon orange colored cans. K-No. 000 grade Non-Fluid-Oil is designed especially for use in all compression cups. This is put up in 3, 5 and 10-pound cans, but for economy, utility and cleanliness, the makers recommend the purchase of this product in their Kejex can. This can is fitted with a heavy floating plunger, which forces its contents from the spout by simply turning a key which is supplied with every can. One turn of the key fills the average grease cup. The 2-pound size is only 3" in diameter, and can be packed with other stores without danger of soiling them.

Manning Fuel Vaporizer.

This is a new type of atomizer made by E. J. Manning, of Janesville, Wis., by the use of which it is claimed that all the fractional parts of the heaviest grade of gasoline are vaporized and converted into useful fuel. It is placed at some point back of the throttle valve where the condensed fuel may collect. The liquid is sprayed into the unobstructed passageway and the vaporizer provides an element of time wherein a part of the spray becomes a vapor while other parts pass to the cylinders in so finely divided a state that very good results may be obtained. In two-cycle practice a vaporizer is fitted in the bottom of each cylinder base where all liquid fuel may flow to it. Each suction stroke of the engine draws a fine spray up through the vaporizer and on to the under side of the hot piston, saving fuel which otherwise would not be atomized, and preventing the formation of carbon.

Bulb-Shank Mooring Anchors.

Bulb-Shank mooring anchors, manufactured by the Fairhaven Iron Foundry Co., of Fairhaven, Mass., are made with a bulb in the end of the shank weighing one-quarter of the anchor's total weight. The purpose of this bulb is to insure the anchor's falling over so that the mushroom will dig into the ground when the first strain is put on it. It also serves as a surge reliever, as by rising slightly from the bottom when the boat gives a sharp pull in a short sea, it prevents sudden strains on the holding part of the anchor. The mushroom part of this anchor is set at the correct angle to give the maximum degree of bite under strain, and has a sharp edge so that it will dig itself in readily. The hollow of the saucer has four divisions, the walls of which strengthen the union of the shank and mushroom and also prevent the anchor from rolling in its bed. This firm's Proof Coil chain is manufactured from especially selected stock for use with Bulb-Shank anchors.

The Providence Twins.

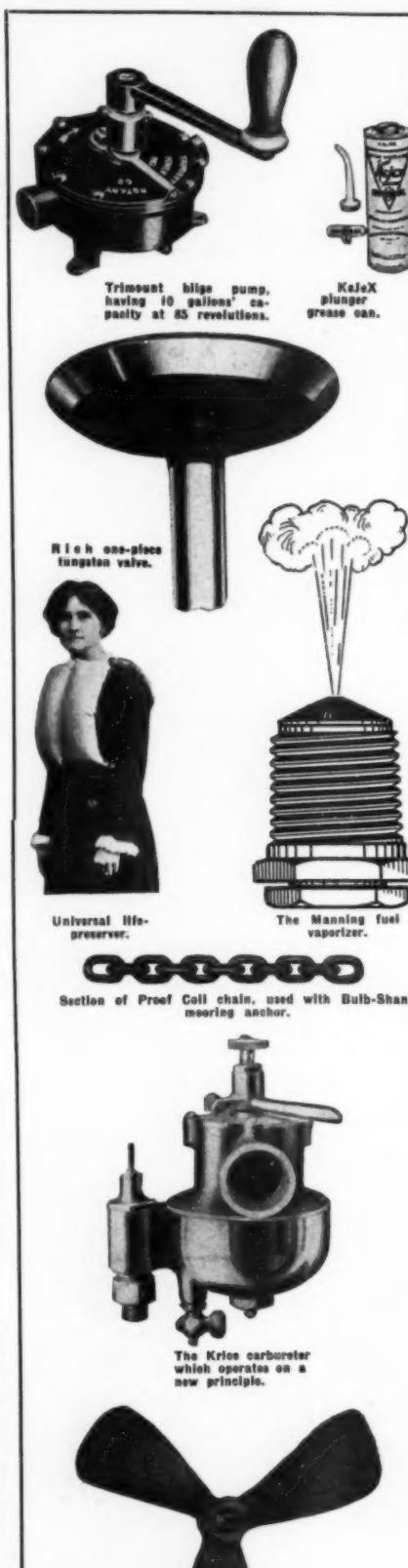
The American Engineering Co., of Philadelphia, Pa., are manufacturers of the "Providence Twins"—the Providence stockless anchor and the Providence launch windlass. The anchor is distinctive in that it has two flukes and a mushroom head all holding at the same time, while the angle between the shank and the flukes is so designed that the anchor digs deep and holds hard. It is pointed out by the makers that this anchor cannot possibly foul. It is made in sizes from 5 lbs. up to 300 for motor boat and yacht use. The other "twin" (the windlass), is neat in appearance, having no sharp corners or exposed ratchets to cut or chafe the rope. It is made with a finished shaft upon which each barrel revolves on two bearings, thus eliminating all possibility of cramping or undue friction.

Ompco Products.

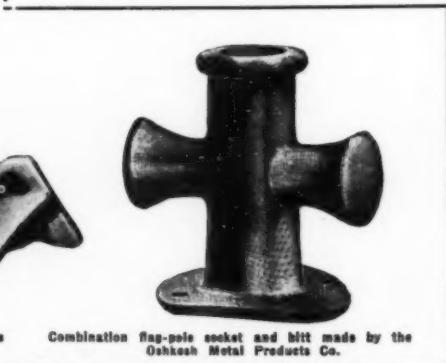
The Oshkosh Metal Products Co., of Oshkosh, Wis., manufacture and job all kinds of marine accessories and hardware. One of their products, a combination flag pole socket and bitt, is shown in the accompanying illustration. It is furnished in two sizes in polished brass and nickel and is sold in the smaller size, having 1 1/4-inch socket, for \$3.50 in brass and \$3.75 in nickel. The catalogue published by this concern contains many interesting bits of marine information.



The Kramer governor, which operates on the fuel supply.



One of the "Providence Twins"—the Providence stockless anchor.



Combination flag pole socket and bitt made by the Oshkosh Metal Products Co.

Bevin Bells.

The Bevin Bros. Mfg. Co., of East Hampton, Conn., make all kinds of gongs and marine bells for various purposes. The jingle bell shown in the accompanying illustration is made with a heavy brass carriage, the clapper being suspended from a brass loop cast into the bell, and is turned out in sizes from $2\frac{1}{2}$ -inch to 6-inch. Fog signal and binnacle bells in numerous types form a large part of this company's output. . . .

Navalite and Supreme Yacht White.

The Chicago Varnish Co., of Chicago, Ill., have manufactured paints and varnishes for over twenty-five years, and perhaps the most famous of their products are Navalite and Supreme Yacht White. Navalite is a varnish which is guaranteed by the makers never to turn white and Supreme Yacht White is an exterior paint which, however, may be used for interior work, and is said never to chalk or crack, and to dry without leaving brush marks. . . .

Albany Grease and Cook's Lubricant.

These two lubricants are manufactured by Adam Cook's Sons, of 708 Washington Street, New York City. Albany grease is known to practically every operator of motor boats and is used by a great many of them. It is for use in grease cups and on the bearings about the boat, giving good lubrication and economy. Cook's Lubricant is for use in reverse gears, it being stated that one filling of the case gives a season's service. It possesses long life and high lubricating qualities and is claimed to cling to the gears under all conditions. . . .

McClellan Tops and Cushions.

All boat tops made by Charles P. McClellan, of Fall River, Mass., are now fitted with a patented safety handling device whereby the tops may be handled by one person. The material used in these tops is 12-oz. Government standard khaki, made specially for them and warranted water and mildew proof. The curtains are detachable and are well lighted with celluloid windows. One of the McClellan specialties is a 17x17-inch life preserver pillow made of Spanish imitation leather and filled with the best kapok. These cushions, which are guaranteed to sustain afloat 25 times their net weight for 48 hours, are sold for \$1 each. . . .

Pyrene Fire Extinguishers.

Pyrene fire extinguishers are made by the Pyrene Mfg. Co., of New York City, and are sold for \$7 in brass and for \$8 with nickel plate finish. Pyrene is especially recommended by the makers for use in extinguishing gasoline or oil fires, as the liquid gets into out of the way places, and on touching the fire or even the heated parts of an engine is converted into a dense white gas blanket which settles down on the fire and smothers it. Pyrene liquid is a chemical combination of organic materials having a high specific gravity; it is non-damaging and non-corrosive, and does not freeze at 60° F. below zero. Several types of boxes and brackets have recently been designed by the manufacturing company for use with Pyrene extinguishers on motor boats, their purpose being to protect the extinguishers against dampness and accident. . . .

Blood Brothers Universal Joints.

The Blood Brothers Machine Co., of Kalamazoo, Mich., continue to manufacture their well-known universal joints. Their style A has been in service for ten years without any changes having been made in its construction. The center block is a steel cube, which, it is stated, always centers the forks perfectly, and never requires adjustment. Bushings are of hardened steel, as are the pivotal bearings which are extremely large and are interchangeable. The grease-cups are held securely in place by means of a locking spring and these cups hold the grease directly onto the bearings, keeping them perfectly lubricated. These universal joints are made for all size shafts up to three inches in diameter. . . .

The Nobind Stuffing Box.

This device, which is a product of the Upson-Walton Co., of Cleveland, Ohio, is intended for installation in any boat where it is desired to eliminate the extra friction caused by misalignment of the propeller shaft. Unless otherwise specified, the Nobind is always made in manganese bronze, and bronze bearings are always provided unless bearings of babbitt metal are asked for. It is claimed for the Nobind that it obviates the necessity of laboriously lining up the motor with shims, by eliminating friction. It increases the power of the motor, that being self-aligning it is always in line, and can never bind, and that it is always ready to use when once placed in position. The Nobind contains a universal bearing which can be replaced if worn without removing the stuffing box, but wear is reduced to a minimum, as the device is packed with graphite packing. . . .

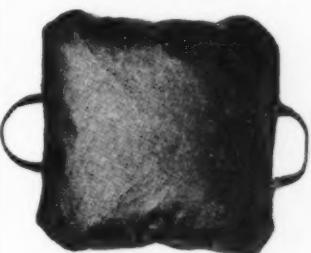


Bevin Bros. jingle bell.

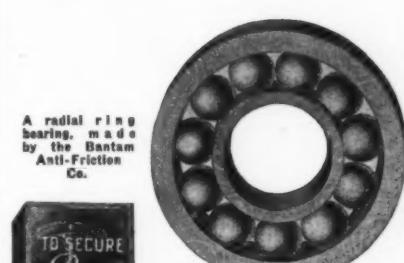
A Curtiss folding lavatory.



The Yankee muffler, made in various sizes for marine use.



Kapok-filled McClellan life-preserver pillow.



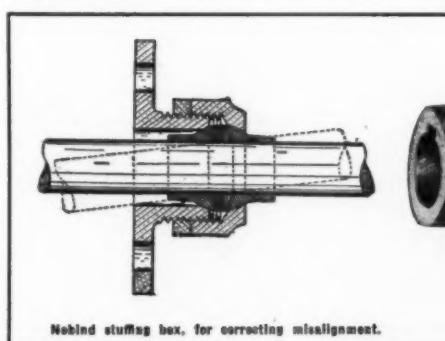
A radial ring bearing, made by the Bantam Anti-Friction Co.



Pyrene fire extinguisher in glass-covered box for marine use.



The Matthews electric capstan, which has a lifting speed of 21 feet per minute.



Nobind stuffing box, for correcting misalignment.

Blood Brothers' universal joint, which is made for all shafts up to 3 inches in diameter.

Curtiss Marine Plumbing.

The J. H. Curtiss Co., Inc., of a South Street, New York City, manufacture all types of marine plumbing supplies and other marine specialties. Their lavatories are made in the fixed and folding type in several patents and their closets include those to be installed both above and below the waterline. They have basin and galley pumps in a variety of styles and provided in a choice of finishes. The folding porcelain basin shown in the accompanying illustration is a compact article which takes up practically no room when folded. Complete with a self-closing cock it sells for \$30, and when fitted with a pump, for \$35. . . .

Yankee Marine Muffler.

The Yankee marine muffler is constructed of galvanized iron, lined with asbestos for its full length, with sheet steel and well riveted. The interior is arranged with openings which cool the exhaust on its outward course. The iron heads are tapped to conform with any size exhaust pipe. Three rods with double nuts run through the entire length of the muffler, holding the heads and inside construction very firmly yet making it convenient to take the muffler apart. This muffler which is made in 8, 12, 16, 24 and 30-inch lengths, by the Yankee Co., of Utica, N. Y., is stated to muffle a two-cycle engine as readily as a four-cycle machine and to overcome all back pressure and thereby increase the speed and power of the engine. . . .

Fogg Upholstery.

The House of M. W. Fogg, of 202 Front St., New York City, has specialized in marine upholstery for the last fifty years and is prepared to completely outfit motor craft of any size. They state that they give particular attention to detail and that difficult curves, odd corners and other irregular places are fitted perfectly. They have made a special study of life preserver cushions which combine comfort with maximum buoyancy, and they supply these in genuine leather, Marrocoline and Pantaact, filled with prime Java kapok or cork shavings. They also specialize in deck chairs which are so treated as to render them weatherproof. . . .

Wilco Specialties.

The E. J. Willis Co., of 85 Chambers St., New York City, in addition to a complete line of marine goods of their own manufacture are agents for a great many accessories of other high-grade concerns. Wilco searchlights, switchboards, storage batteries, electric signals, are some of the more familiar of their products and within the past few months they have added many new and valuable articles to their list. The company now offers the Wilco outboard motor which weighs only 50 pounds and converts any rowboat into a motorboat. . . .

Bantam Bearings.

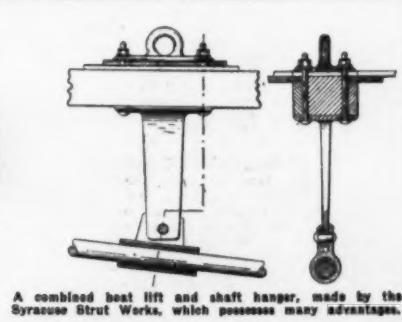
The Bantam Anti-Friction Co., of Bantam, Conn., have specialized exclusively for a number of years in the manufacture of bearings of the ball and roller types. Many of these bearings of stock sizes are kept constantly on hand, and the company have also many designs for bearings for every conceivable purpose which may be obtained with but little delay. . . .

Matthews Electric Capstan.

Recognizing the need for an electric capstan on boats over go-footers, and finding none on the market, the Matthews Boat Co., of Port Clinton, Ohio, have designed and patented one of their own, which is now being built in two sizes—for cruisers 50 to 100 feet in length, and for those from 100 to 200 feet. The motor—32 or 110-volt—and transmission are entirely enclosed, no moving parts being outside of the shell. Only two wires lead from the capstan to the switchboard, and all controls are on the capstan. The approximate hoisting speed of this instrument which in the smaller size weighs less than 500 pounds, is 21 feet per minute. The capstan is fitted with brake and ratchet, with chain well cast in place, is waterproof, is ball-bearing throughout, and runs in transmission grease. . . .

Combined Boat Lift and Shaft Hanger.

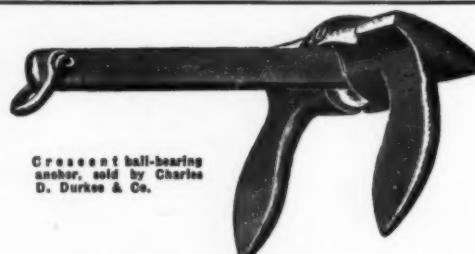
The Syracuse Strut Works, of Syracuse, N. Y., produce a combined boat lift and shaft hanger which has many points worth considering. The hanger bolts to the keel and not to the planking, and the inside plate is provided with a ring cast in one piece with this plate, by which the boat may be hoisted from the water, as it is claimed that the four bolts by which the hanger is secured cannot pull through the plates. The hanger follows in line with the shaft, and is so designed that no obstacle under water can catch to it. The shank can be cut to the proper length after the engine and shaft are lined up, and the bearing (which can be babbited to a variety of shaft sizes) adjusts itself to any shaft angle. Other advantages claimed for this device are that the hanger cannot twist or turn, and that its construction gives more solid water to the propeller. . . .



A combined boat lift and shaft hanger, made by the Syracuse Strut Works, which possesses many advantages.



The Gray gasoline filter which is fitted with a three-way valve.



Crescent ball-bearing anchor, sold by Charles D. Durkee & Co.



Norwalk Brass Co.'s stuffing box—typical of this company's casting work.

Gray Gasoline Filter.

The Gray-Hawley Mfg. Co., of Detroit, Mich., in addition to their muffler, spark and throttle controls, and whistle outfit, also make the Gray gasoline filter which is designed to eliminate carburetor troubles which are caused by foreign matter in the gasoline. In this filter are screens of different mesh which are held in position by separating rings and a nut. The screens are easily and quickly removed for cleaning by unscrewing a cap and nut, and for this operation it is unnecessary to disconnect any piping. The filter is fitted with a three-way valve by which the gasoline is admitted to the carburetor in a filtered state, or a portion of it is released from the base of the valve with any impurities which may have collected, or some of it is drawn off to fill a priming cup.

Smack's Life Preserver

The Universal Motor Boat Supply Co., of Atlantic Highlands, N. J., are the distributors of Smack's pillow life preserver, which is stated to be far in excess of the Government's requirements for buoyancy. This life preserver makes a comfortable seat cushion, stows away in small places, and can be put on instantly in case of need. As may be seen from the accompanying illustration, it is worn around the neck, and it is stated that because it is worn in this position it will keep the wearer's head out of water even after he has become exhausted. Made of best Java kapok, it sells for \$1.50.

The Long Horn.

This horn is a hand-actuated instrument produced by H. W. Johns-Manville Co., of New York City. It is so constructed that a ratchet plunger pressed by the hand engages a train of gears which in turn actuate a revolving rotor fitted with a number of rollers. The rollers come in contact with an adjustable set screw in the diaphragm, causing the latter to vibrate. The projector is in one piece without a seam, and the housing is made of fine heavy grade metal. The volume of sound of this horn varies at the will of the operator from a low, melodious tone to a loud and insistent warning signal. The device is independent of batteries, wires, etc., and is stated to be practically indestructible. Other well-known specialties of this company include J-M spark plugs, batteries, mobilite electric lamps, etc.

Harthan Propellers.

Harthan propellers are made on the principle of the true screw of a special bronze composition which gives an extremely tough metal. This strong composition allows a very thin blade, the edges of which are brought down very sharp, reducing the power absorbing element to a minimum. These propellers are made by the McFarland Foundry & Machine Co., of Trenton, N. J., in both right and left-hand type of two or three blades and in practically any pitch. This concern also produces a line of shaft couplings, universal joints and shaft bearings of single and double adjustable type.

Lubroleine Oils.

The Fiske Brothers Refining Co., of 24 State St., New York City, produce Lubroleine motor oils in several grades for marine engines. These oils are described as liquid enough to feed by gravity through lubricator drips, while they are equally satisfactory for pressure feed with the splash system, or with mechanical force feed. They are made in Crystal, Medium and Heavy grades, the first two being especially suited for marine motors. The Crystal grade is a clear, water-white oil of low cold test, medium consistency, and is free from carbon-forming particles.

The Climax Oiler.

The Climax Brass & Manufacturing Co., of Chicago, Ill., manufacture a mechanical oiler which is described as being simple in construction and consequently of great strength. The entire mechanism is immersed in a bath of oil, and as the movement of the working parts is slow there is very little wear. One of the features of this oiler is a single eccentric which admits the oil to all the various ducts. The lift of the measuring plunger is merely a fraction of an inch, so that any sediment that might settle from the oil is left undisturbed in the bottom of the tank. Absolute accuracy in measuring the supply of oil to the various pipes is claimed for the Climax, which is made in several sizes.

Boucher Products.

The H. E. Boucher Mfg. Co., of 150 Lafayette St., New York City, pattern and model makers, make a specialty of marine models of all kinds. Motor boatmen who desire miniature reproductions of their cruisers or racing craft may have them made to order by this concern, and boat clubs may be fitted out with half models of famous craft for wall decoration. The Helix gas mixer designed for installation in the intake pipe above the carburetor of a gasoline motor for the purpose of breaking up the fuel mixture more thoroughly, is also made by this company. This device is sold for \$1.



Smack's life-preserver, which is worn around the neck.



The Long Horn, which gives a loud and insistent warning signal.

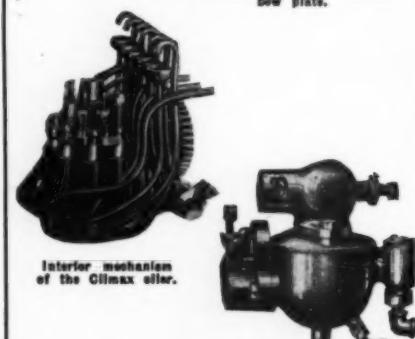


The Ferguson rear starter, which is furnished in four sizes.

A Harthan propeller, made by the McFarland Foundry & Machine Co.



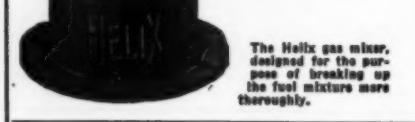
A Wilcox-Crittenden combination bow plate.



Interior mechanism of the Climax oiler.



The Model D. Schebler carburetor, which was used on several prize winners last summer.



The Helix gas mixer, designed for the purpose of breaking up the fuel mixture more thoroughly.

Durkee's Ball-Bearing Crescent Anchor and Other Specialties.

Charles D. Durkee & Co., Inc., of 2 and 3 South Street, New York City, state that while their many products have given the utmost satisfaction in the past, they have been overhauling each product and are certain that in the coming year they will tremendously increase in popularity. One of their famous articles is the Crescent ball-bearing anchor. The shank of this anchor has a ball socket cast into the head, doing away with the necessity of a pin to keep the shank from backing out. It is furnished in weights from 5 pounds up to 300 pounds and is constructed of galvanized iron with a drop forged shank. Durkee's combination taffrail log and speed counter does duty not only as a compact and accurate log but also as an instrument for counting the revolutions of an engine. This device is furnished in six sizes for boats up to 100 feet in length.

Norwalk Wheels and Special Castings

The Norwalk Brass Co., of Norwalk, Conn., are manufacturers of brass and bronze engine fittings and propeller wheels and special castings of all descriptions. They call particular attention to the fine quality of metal used in their castings and to the smooth finish given to all articles. The accompanying picture illustrates one of the Norwalk stuffing boxes, which they claim has exceedingly ample packing space and long re-enforced web for the bearing. This stuffing box is made in various sizes from $\frac{3}{8}$ inch to 2 inches.

The Ferguson Rear Starter

This starter is manufactured by William E. Ferguson, of St. Louis, Mo., in four types for light and heavy-duty engines. It is claimed for this starter that it will operate as well as starters of much greater cost, and that the same starter will fit right or left-hand engines. All sizes of this starter are geared two to one—that is, the crank turns around twice to the engine once. No. 1, light type, with one standard and bulkhead bearing, is sold for \$4.75, and No. 2, light type, costs \$7.25, with standard only. Nos. 1 and 2 in the heavy type sell for \$1 above the prices listed above.

Wilcox, Crittenden & Co.'s Marine Goods.

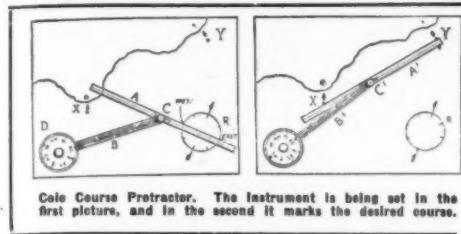
The plant of Wilcox, Crittenden & Co., Inc., of Middletown, Conn., is equipped with the most improved facilities for producing drop forgings, boat fittings, awning frames, etc., and brass, and malleable and gray iron castings of any desired pattern to order. In addition to this type of work, the company turns out all kinds of marine hardware, including tools, blocks, port lights, ribbed glass deck lights, etc. Their combination bow plate having flag pole, socket and chocks, and shown in the accompanying illustration, is furnished in three sizes in plain or polished brass and in galvanized iron.

Schebler Carburetors.

The Model D Schebler carburetor, made by Wheeler & Schebler, of Indianapolis, Ind., is the original Schebler carburetor, and is especially adapted for marine motors. Air intake and throttle are interchangeable, and connections can be made to either vertical or horizontal manifolds. The standard carburetor has the slide disc throttle in a horizontal position, but there are a number of different type butterfly throttles made for this model. It is interesting to note that this instrument was used on Baby Speed Demon V., Baby Reliance, and Buffalo Inquirer, in last summer's racing, while Disturber IV was also Model D-equipped. Other Schebler models adapted for marine use are Model L and Model R.

Crockett Varnishes.

Crockett varnishes, made by the David B. Crockett Co., of Bridgeport, Conn., have been standard in the ship and boat industry for almost half a century. To-day their leaders, Spar Composition, No. 1 Preservative and Waterproof Floor Finish, are being manufactured under the same formulae which have earned for them the reputation of quality since their first introduction to the trade. Spar Composition is stated by the makers to be invaluable for all exterior marine work. This varnish is salt and fresh waterproof, will not turn white, and possesses great durability. No. 1 Preservative is a perfect interior finish, and will not crack, blister or scale, while it can be washed with hot or cold water and soap without injury. Waterproof Floor Finish, as the name implies, is a floor varnish which is waterproof. It is elastic and very durable, is adapted for cabin floors, and will not show heel marks. Hot water and soap will not affect the lustre in any way.



Cole Course Protractor. The instrument is being set in the first picture, and in the second it marks the desired course.

Cole Course Protractor.

This device, made by the **Marine Compass Co.**, of Bryantville, Mass., manufacturers of compasses and other nautical instruments, is designed to simplify the process of laying out courses on a chart. Referring to the accompanying illustration, it will be seen that in order to find the course between the buoys X and Y (Fig. 1), the dial D is placed on the chart adjacent to the buoys, and the rule A being brought up to the compass rose it is placed on some easily recognizable points such as east and west. The dial is then turned so that the reading matter under two small pointers moving around its outer edge is also east and west, the rule being kept in position on the rose during this operation. The protractor is now in adjustment, and if the rule is swung to touch the buoys X and Y (Fig. 2), the course will be automatically shown by the two pointers.

Dirigo Compasses.

These compasses, manufactured by **Eugene M. Sherman**, of Bellevue, Wash., are made with cast bronze bowl and fitted with a flexible diaphragm to allow for the expansion and contraction of the liquid. The liquid used is oil, which has the advantage that a hardened steel pivot can be used without danger of rust, and it is also claimed that the dial when immersed in oil will have a period of oscillation longer than the duration of the roll of the boat, producing steadiness in a seaway, yet without sluggishness. A valuable feature of the Dirigo is the legibility of the dial—the points stand out clear and sharp against the white background, and other features pointed out by the maker include absolute precision, obtained by the perfect alignment of the needles with the dial and the use of a high-grade pivot and jewels.

Emme, Young & Co.'s Marine Goods.

Emme, Young & Co., of 119 Chambers St., New York City, offer a most complete line of motor boat specialties and accessories. In glancing through their catalogue one finds a complete assortment of marine hardware, electrical devices, fire extinguishers, engine fittings, compasses, clocks, deck furniture, varnishes, and in fact everything that is of interest to boating people. Campers will find that they may be fitted out by this concern with tents, folding cots, chairs and tables, all so designed that they may be packed up and stowed in a small place aboard a boat.

Improved Thermex Silencer.

The Improved Thermex Silencer, manufactured by the **Thermex Silencer Works**, of East Boston, Mass., is spherical in form and extremely simple in construction and in installation. The exhaust inlet is so placed in relation with the water inlet that the stream of water is caught up by the exhaust gases as they issue from the engine and whirled around the shell, to flow to the open drain at the bottom. The opening for the exhaust outlet is at the center of the chamber where all rotary motion of the gases has been reduced to nothing. As this opening is adjustable by means of a long nipple having cap and lock nut, it is possible to regulate it to cause just enough cushion in the chamber to change the intermittent exhausts into a practically continuous flow. This exhaust may be placed in any position, exhausting at any angle just so long as it is installed 2 inches above the load waterline.

Essex Lubricators.

The **G. B. Essex Co.**, of Detroit, Mich., concentrate their entire efforts on the production of lubricating devices and gasoline mixing valves. The list of lubricating devices includes such items as gravity oilers, automatic multi-feed oilers, oil pumps, oil cups, grease cups, and their fittings. These devices are the result of many years' experience, and the manufacturers state that they offer their line to the public with confidence that they will meet the most exacting requirements.

Leak-Proof Rings.

Leak-Proof piston rings, made by the **McQuay Norris Mfg. Co.**, of St. Louis, Mo., are composed of two concentric sections, one fitting within the other, the opening in each section being absolutely closed by the flange on the opposite section. As a result of this construction, it is claimed that it is impossible for gas to leak past the piston, or for excess oil to work up into the combustion chamber. These rings are made of a processed gray iron of great smoothness and elasticity and each individual ring is ground to a mathematical exactness. These rings are made in sizes to fit practically every type of motor, and over 1,000 sizes are carried in stock at the factory.

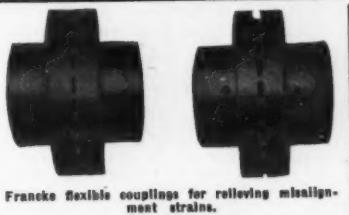
Berry's Sub-Marine Paint.

This paint, which is made on a new principle by the **Sub-Marine Paint Co.**, of Portland, Me., is an anti-fouling and friction-reducing composition for boat bottoms and underwater use. The manufacturers state that it may be applied to bare wood or steel or over other paint provided the under coating solidly adheres to the surface. The second coat if required may be applied after giving the previous coat about one hour to harden. For use on racers this paint may be polished to practically a frictionless surface. They also state that it may be used on a wet surface except that it may require a little more rubbing out with the brush when applied to a very wet surface.

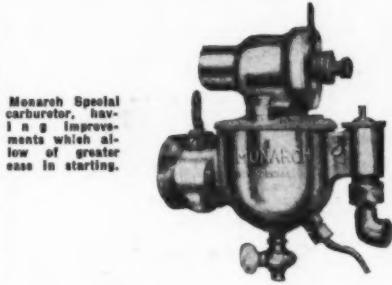
General Accessories.



Revolutions Indicator, sold by **Emme, Young & Co.**



Francke flexible couplings for relieving misalignment strains.



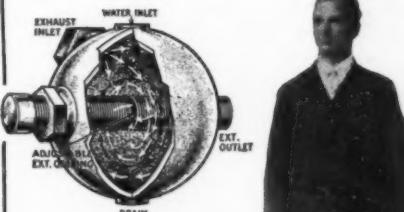
Monarch Special carburetor, having improvements which allow of greater ease in starting.



A valuable feature of the Dirigo compass is the legibility of the dial.



The Koven gasoline tank.

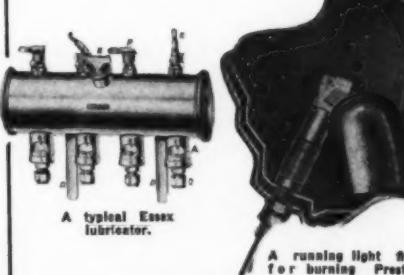


The Koven cylindrical gasoline tank.

Thermex silencer, showing the path of the gases.

Neversink life-preserver.

Neversink life-preserver.



Leak-Proof ring, which is made in two concentric sections.



Kerosene vapor stove, sold by the **A. S. Morse Co.**

Francke Flexible Couplings.

The **Smith-Sorrell Company, Inc.**, of 90 West Street, New York City, make the Francke flexible coupling for any size engine or shaft, and they state that the following results are obtained from its use: It relieves misalignment strains from the engine and propeller-shaft, and this results in the elimination of a large part of the friction load, which in turn gives more speed to the engine, prevents the bearings from heating up and eliminates leaky stuffing boxes. This coupling is provided with a central bolt which transmits the propeller thrust and pull right through to the engine thrust bearing, obviating the necessity for an extra thrust bearing in the propeller shaft.

Monarch Special Carburetors.

The **Monarch Valve Co.**, of 112 Front St., Brooklyn, N. Y., who produce mixing valves, carburetors, and other marine accessories, offer to the motor boat user their Monarch Special carburetor which has all the features possessed by the Monarch Standard and in addition, important improvements which allow of greater ease in starting. These improvements consist of a rotating shutter provided with four ports mounted upon the adjustment end of the inlet valve structure with similar openings thereto. The function of this shutter is to give a positive adjustment to the amount of fixed air that in the Monarch Standard is allowed to enter beside the seat of the automatic air valve. These carburetors are made in two models and in two patterns, horizontal and vertical.

Koven Tanks.

Koven tanks are made by **L. O. Koven & Brother**, of 50 Cliff Street, New York City, of the best quality open hearth steel, and the fittings are fastened in such a manner that they will not become loosened. The tanks are galvanized inside and out, and particular care is taken to see that no dross remains on the inside of the tank to cause trouble. They are made in many stock sizes or may be had of any size or shape desired and of any thickness of metal on short notice. Baffle plates are furnished at an extra price. Koven mufflers, rudders and oily waste cans are also furnished by this company as well as many other articles of interest to motor boatmen.

Neversink Garments.

Neversink garments for men, women and children are made in many styles by the **American Life Saving Garment Co.**, of Boston, Mass. These garments are made so as to protect the wearer's life while in the water, while they are so designed that they present no bulky appearance and may be worn as ordinary coats or vests around the boat. The quilted linings are filled with a light, soft substance which gives them their buoyant quality. This lining is described as practically non-absorbent, and it may be immersed and dried any number of times without deterioration. The Neversink coat is made like the familiar Norfolk jacket, except for the special lining, and the waistcoat is similar, but without the sleeves, thus giving greater freedom of movement.

Prest-O-Lite for Boats.

For a simple, reliable and economical means of lighting a boat the **Prest-O-Lite Co.**, of Indianapolis, Ind., recommend their Prest-O-Lite tanks and fittings. The acetylene gas provided by this company in the familiar tanks is obtainable practically everywhere, and the tanks present no problem of stowage on a motor boat. The company point out that acetylene gas fixtures can be obtained to fit in with any interior scheme, and by the use of their Prest-O-Lite, it is possible to light these as well as the running and searchlights without the use of matches. The Prest-O-Lite is recommended to make engine-starting easier, no matter whether the machine is started by electric, mechanical or hand cranking. The gas is admitted to the cylinders through the intake manifold under low pressure, and provides a combustible charge no matter what the weather conditions.

Star Ball Thrust Bearings.

The **Star Ball Retainer Co.**, of Lancaster, Pa., make a specialty of ball thrust bearings for marine purposes. These bearings are of the three-ring type, with the balls caged in one ring and with the other two rings serving as bearing surfaces. To increase the bearing surface the two outer rings have each a round channel cut in the inner face in which the balls revolve. All parts of these bearings are made with the greatest care, of the best material obtainable.

Morse Hardware.

The **A. S. Morse Co.**, of Boston, Mass., have a line of hardware which covers practically every phase of marine needs. Their catalogue lists axes with which to chop down a tree for a boat's keel, and once the keel is secured, they can supply every kind of tool necessary to convert it with the frames and planking into a finished boat. They have also deck hardware and furnishings, paints, varnish, etc., and after the boat is in the water, charts, protractors, compasses, etc., to start her on her first course. In short, they aim to meet all the requirements of motor boatmen.

Master Tops and Cushions.

Master Standard Auto Boat Tops are made by the **Theodore Master Co.**, of 34 East 9th Street, New York City, of the best quality duck obtainable, treated with a special finish which gives it the appearance of leather, renders the material waterproof, and is warranted not to crack or blister by exposure to the elements. The bow fixtures are of heavy polished brass, and while the initial cost of these fittings is slightly in excess of iron it is pointed out that they give greater service and are therefore more economical. Master cushions are made in several sizes or to order to fit any boat and are furnished in the life preserver or ordinary type.

M. D. Co.'s Combination Shaftlog.

The **Mechanical Devices Co.**, of Watervliet, N. Y., point out that in using their combination shaftlog, the necessity of making a wooden shaftlog and putting the stuffing box on it, is obviated. This device is of the self-aligning type, and the bearings are made of leaded bronze, reamed to size. As any hull stretches more or less at speed and in seaways, these bearings are of the adjustable type, so that they may be regulated without undue friction or loss of power. This company's single and double struts are provided with ball and socket bearings, aligning automatically with any shaft angle, and being adjustable at any length, are adapted to round, flat or V-bottom boats, and in installing these struts there is no hubbing to be done. The whole process consists merely of bolting them with four or eight bolts, according to the type used, through the keel.

Kenyon Tops.

The **R. L. Kenyon Co.**, of Waukeahs, Wis., make a specialty of such marine goods as motor boat tops, cushions, fenders, life preserver pillows, etc. Their tops are light in weight and flexible because of their construction. No padding is used and it is stated that these tops are always smooth when up and compact when folded. They are made in three distinct grades, consisting of the Kenyon Standard, Kenyon Heavy Duty and Government Dyed Khaki. The Standard top is double coated with artificial leather, tan outside and green inside or black outside and tan inside. This style is recommended for its excellent wearing qualities. The Heavy Duty is pre-shrunk and waterproofed by a secret process and contains a preparation which it is stated gives it long life and durability. The Government Dyed Khaki is produced for those who desire a grade cheaper than the other types and while not waterproof, it is water repellent.

Reliance-Rochester Steering Gear.

W. S. Hall & Co., of Rochester, N. Y., in addition to a full line of marine steering gear for all types of boats, have just brought out a new steering wheel for the 1915 season, called the Reliance Special. The feature of this outfit is that it may be raised out of the way to allow the operator easy entrance to his seat, and removed entirely and stowed away when the boat is not in use, to prevent theft. With this tilting feature the wheel may be installed in the most comfortable position for driving. The illustration shows the wheel with rim uplifted.

Jasco Tanks.

Janney, Stelametz & Co., of Philadelphia and New York, continue to manufacture their Jasco tanks in capacities from 1 gallon to 100. These tanks are made of cold-drawn seamless steel and are tinned with pure block tin to render them acid as well as leak-proof. They are tested to 300 pounds pressure. Jasco tanks for fuel are also made with a self-contained auxiliary compartment holding from one to five gallons, and this compartment fills itself when the main tank is being filled so that there is no danger of its being forgotten. An auxiliary tank of this sort is especially appreciated by any one who has ever had the misfortune to run out of fuel in inauspicious places. Air tanks for supplying engine starters and whistles are also a part of this well-known line.

The Shaw Centripetal Propeller.

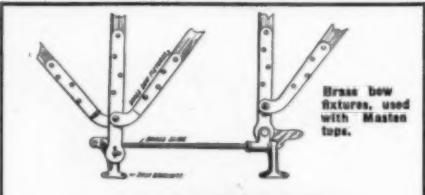
The Shaw Propeller Co., of Boston, Mass., manufacture a line of patented propellers for high and semi-speed boats. The company claims that owing to the design of their propeller it is possible with its use to effect a noticeable gain in speed. This wheel has a driving surface which is part of a cone, and the principal result claimed for its action is to overcome the centrifugal tendency of the water particles thus obtaining a straight reaction in the direction of travel. These propellers are made of the best quality manganese bronze, having, it is said, a tensile strength of 83,400 pounds. Because of this great strength it is possible to use very thin blades, thus reducing the amount of power required to turn the wheel.

Kyanize Waterproof Spar Varnish.

Kyanize waterproof spar varnish, manufactured by the **Boston Varnish Co.**, of Boston, Mass., is furnished in distinctive triangular cans in order to assist the user to distinguish this varnish from others at first sight. The makers state that once used it will always be used as it will not turn white or blue under water, or blister, check or crack. It is also stated to be unaffected by the action of the elements.

Socony Products.

Thanks to the **Standard Oil Co.**, of New York, it is possible for the cruising motor boatman to obtain supplies of gasoline in practically every waterfront town along the inland waterways of the Atlantic coast. The familiar trade name, "Socony" tacked up in front of a distributing station means that in addition to gasoline the dealer is also prepared to supply Polarine oils and greases. Polarine is claimed to feed well in the coldest weather, and it is sold usually in five-gallon cans in light, medium and heavy body.



The Negus electrically-lit motor boat binnacle.



The Wiard Speedler.



Sectional view of a Jasco tank.

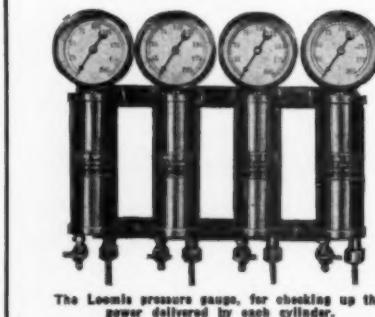


A typical Detroit force-feed oiler.

One of the many Shaw centripetal propellers.



A six-throw crankshaft forged by P. H. Gill & Sons.



The Loomis pressure gauge, for checking up the power delivered by each cylinder.

Sta-Tite Piston Rings.

Sta-Tite piston rings are made in three-piece construction, thus sealing all joints and producing, in effect, a continuous unbroken ring. The manufacturing company the **Sta-Tite Packing Ring Co.**, of St. Louis, Mo., state that their construction insures multiple contact on the cylinder wall, making leakage an impossibility, while their flexibility provides even distribution of expansion all around the cylinder wall, thus overcoming uneven wear and reducing friction to a minimum. They are accurately ground causing them to seat perfectly in the piston grooves, thus eliminating play and any possibility of carbon being deposited in the groove under the ring. It is claimed that they are particularly suited for two-cycle motors, as they will work in ported engines without being pinned.

Valspar Varnish.

The outstanding claim for Valspar, manufactured by **Valentine & Co.**, of 257 Broadway, New York City, is that it will not turn no matter what the severity of the weather conditions to which it is exposed. It may be used inside or out, and may be washed with warm water and soap; it is tough, durable and elastic, and it is stated that it will not mar or scratch white. It also possesses the other good qualities that a good varnish should possess—it has good body and palesness, is easy working and flowing, rapid hardening and drying, and has a high luster and long life. This company also manufactures Valspar enamels and bronze bottom paint, Celox primers and fillers, pure colors in oil, etc.

Negus Motor Boat Binnacle.

The firm of **T. S. & J. D. Negus**, of 140 Water St., New York City, offer an extremely extended assortment of nautical instruments, and make a specialty as well of adjusting compasses for local attraction. Their special motor boat binnacle shown in the accompanying picture is fitted with a liquid compass with three-inch card, illuminated from below by an electric bulb run off batteries located within the binnacle. A soft, steady light, unaffected by the fiercest squalls, is thus instantly available. It is made entirely of brass, polished, and costs complete \$34.

The Wiard Speedler.

This device, which is distributed by the **Breaster-Wallace Sales Co.**, of Detroit, Mich., and is intended to effect an economy in the use of gasoline, is automatically regulated by the heat of the motor. Attached to the intake manifold, close to the carburetor, the air admitted is regulated by a thermostatic blade, which when heated, raises a mushroom valve from its seat, breaking up the particles of gasoline, and insuring a perfect mixture and maximum expansion. When the motor is stopped and cools off the blade returns to its normal position, allowing the former to be started on its regular mixture. The cost is \$4. This company also offers, in addition to many other things of interest to motor boatmen, a line of sparking batteries at reasonable prices.

Gillespie's Varnishes.

Chas. H. Gillespie & Sons, of Jersey City, N. J., have been in the varnish making business since 1824, and two of the varnishes on which they made their reputation are Monarch Spar and Monarch Preservative. The former is for exterior work, and the makers state that it has exceptional lasting qualities, since it will not blister from the heat of the sun, or crack from the cold of winter, while the action of rain and mist do not affect it. Monarch Preservative is intended for finishing natural and stained wood, preserving the wood and enhancing the beauty of the grain. It is a quicker dryer than Monarch Spar and is intended more for inside work. It can be rubbed to a polish and dried hard with a beautiful luster.

Detroit Oilers.

The Detroit force feed oilers, manufactured by the **Detroit Lubricator Co.**, of Detroit, Mich., consist essentially of one or more pumping units—one unit to each feed—actuated by a driving shaft. The entire mechanism is contained in a tank or reservoir. Each pumping unit consists of a double plunger valveless pump and while one plunger pumps the oil from the reservoir through the sight feed nozzle, the other plunger takes the oil from the sight feed chamber under the nozzle and forces it to the spot to be lubricated. All Detroit oilers are so constructed that they start and stop automatically with the engine, since they are driven from the engine's crankshaft or camshaft. Because of this it is impossible to burn out a bearing through forgetting the oil supply while the oiler automatically delivers more or less oil as required by the speed of the motor.

Gill Crankshafts.

The **P. H. Gill & Sons Forge and Machine Works**, of Brooklyn, N. Y., have a special department for crankshafts in which they turn out any type of crankshafts to order, and also make a specialty of regrinding old shafts. All this company's shafts are made from solid billets, and the steel used is highest grade obtainable, prepared to their specifications. Quite recently they turned their attention to making twelve-throw shafts for marine engines, and as part of their work furnished the shafts for *Disturber IV*.

Loomis Pressure Gauge.

This device, manufactured by **Osborn P. Loomis**, of Newport News, Va., indicates the pressure existing in the cylinders of a gasoline or Diesel motor at any and all times. By its use it is possible to tell whether the spark is timed correctly, whether the mixture is adjusted properly, and to observe the changes made in the foregoing while they are being effected. It also shows which cylinders are weak from leaky valves or piston rings and which are doing the most work. This appliance is generally easily installed and it may be mounted in the engine room or adjacent to the wheel as desired. It is furnished with all valves and necessary tubing for ordinary fitting.

Muir Model E Carbureter.

The **Muir Company**, of 1216 Dime Bank Bldg., Detroit, Mich., have introduced their Model E carbureter, which has been specially designed for use on small cars. Model E is a multiple jet carbureter giving correct mixture through a range of speeds with free air passages at high speed. The float needle and seat are of special alloy and are accurately ground. The overhead float shut-off mechanism is arranged to eliminate dirt, etc., from lodging on the seat and causing leaks. The carbureter is made of brass and is well finished. Its cost is \$4.50.

Yacht Blocks and Fittings.

Merriman Brothers, of Boston, Mass., in addition to an extensive line of wooden blocks for sailing yachts, manufacture bronze blocks which they recommend for use on motor boats having wire tiller ropes. These blocks are furnished in three sizes for $\frac{1}{4}$ and $\frac{3}{8}$ -inch wire and cost from \$1.25 to \$3. They also furnish rail stanchions, awning stanchion fittings and boat davits for use on motor yachts.

Kroh Tops and Cushions.

Kroh tops, made by the **C. Z. Kroh Mfg. Co.**, of Toledo, Ohio, are constructed on scientific principles and furnished with a choice of several grades of coverings. All of these tops are furnished complete with side curtains, spray hoods, fixtures, etc., and the manufacturers state that when their measuring diagrams are filled out properly the tops will fit the boats for which they are constructed to a nicety. In addition to their tops, the Kroh Company produce also a line of life preserver pillows and cushions. The cushion shown in the accompanying illustration is made of imitation leather with $1\frac{1}{2}$ -inch facings, and corded top and bottom. The smallest size, measuring 10×16 inches, is listed at \$1 when finished with duck bottom and at \$1.25 when finished with artificial leather top and bottom.

Kellogg Air Starting System.

Simplicity is the keynote of the Kellogg air starting system, made by the **Kellogg Mfg. Co.**, of Rochester, N. Y. The system consists only of air pump and distributor (combined in one unit in the two and four-cylinder models) and the storage tank. The pumps are made in two, four and six-cylinder models and the six-cylinder model is recommended for use with marine engines, owing to its greater capacity. It is said that this system will spin the heaviest motor, and it is pointed out that there is no possibility of the compressed air weakening the gasoline mixture, as the air is admitted only after the charge in the cylinder has been compressed and has failed to fire. This company will shortly place on the market a new type of pump designed for furnishing air for blowing whistles on small boats.

Kuhls' Paints.

H. B. Fred Kuhls, of Brooklyn, N. Y., produces a line of marine paints which includes outside paints for metal and wood, and an elastic seam composition which is designed for use instead of putty to fill deck seams. It is claimed that this composition will not harden or crack out of the seam, and that the material is thus immeasurably superior to putty or white lead, owing to the ease with which these latter articles can be knocked or jarred out of the seams. Copper bottom paints are also included in Mr. Kuhl's line, as well as an elastic yacht paint designed for topsides use, which is stated never to chip or crack from vibration.

Lumber for Boats.

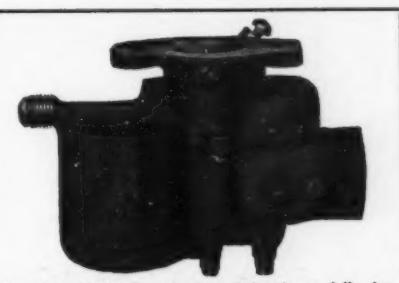
Quite frequently the most difficult part of boat-building for an amateur is the job of purchasing the right kind of lumber for the purpose, since many wood dealers do not carry in stock woods adapted to this purpose. **William P. Youngs & Bros.**, of First Avenue and Thirty-fifth street, New York City, however, who supply many of the large boat-building yards throughout the country, make a specialty of satisfying the needs of the amateur. They keep in stock white cedar in long lengths, mahogany, and all other boat woods, in a large assortment of sizes, and make it their policy to furnish immediate quotations and to make prompt shipments.

Lobee Circulating and Bilge Pumps.

These pumps are especially adapted for pumping bilge water and for circulating water or oil on all gasoline engines. They are made by the **Lobee Pump & Machinery Co.**, of Buffalo, N. Y., in a variety of sizes, and are operated by pulley and belt, sprocket and chain or by direct gear drive. Features claimed for them are that they are positive in action, noiseless in operation, efficient and durable. The suction and discharge can be reversed merely by changing the direction of rotation. All parts are made to template, are therefore interchangeable, and in case of accident can be quickly replaced. It is stated that these pumps will pump as much in proportion at 100 r. p. m. as at a speed of 300 r. p. m. or more.

Talbot Boilers.

The **Talbot Boiler Co.**, of 120 Liberty street, New York City, manufacture steam boilers in single units in all principal sizes, from 10 h.p. up to 500 h.p. These are made on a comparatively new principle, and owing to the nature of their construction, withstand abnormally high pressures with safety, while they are light weight and occupy but little room. Complete Talbot power plants are stated to operate on $\frac{1}{4}$ cent per horsepower hour, including fuel and lubrication. To give an idea of the small sizes of these outfits, it may be said that the boiler of the Talbot 756 K. W. electric generating plant measures only $28 \times 28 \times 34$ inches. The manufacturers state that this plant, which



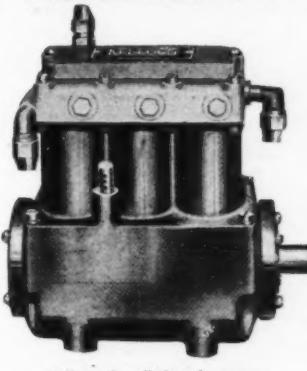
The Muir Model E carbureter, designed especially for small engines.



Merriman bronze blocks for use with wire tiller ropes.



A Kroh life-preserver cushion which is furnished in a variety of sizes at reasonable prices.



Kellogg six-cylinder air pump.

uses fuel oil, produces electric current at a cost of 1.33 cents per K. W.

Edward Smith & Co.'s Varnishes.

Edward Smith & Co., of Long Island City, who have been in the business of supplying paints and varnishes to boating people for the last eighty-seven years, specify Marinite and Spar Coating as the leaders of their line. Marinite is made especially for wood and metal work that is under water most of the time. It dries quickly, will not turn white, and will withstand a lot of rough usage. Spar Coating is a light-colored varnish, which is free-working, elastic, durable and brilliant. It dries dust-free in eight hours, and the makers recommend it especially for parts which are exposed to the ravages of the weather.

Old Roman Solder.

This preparation is made by the **Old Roman Solder Co., Inc.**, of 202 East Forty-sixth street, New York City, for use on motor boats, in machine shops, etc., in a variety of ways. It is applied without heat, and it is only necessary to clean the part to be soldered free of all grease and dirt. The makers recommend it for caulking boats, and state that it can be applied while the boat is in the water. It is also used for stopping cracks in water jackets, and its fact is intended to be applied wherever solder may be needed. This concern's Klearspot, when applied to windshields, pilot houses, etc., is guaranteed to give a clear view in any sort of weather.

Lunkenheimer Motor Accessories.

The **Lunkenheimer Co.**, of Cincinnati, O., specialize in accessories of all kinds for gasoline engines. One useful little article of theirs is an emergency gasoline tank cock. This device is attached to the bottom of the fuel tank, and is intended to warn the operator of the low level of his gasoline tank before the fuel is entirely exhausted. Two tubes are tapped through the tank side of the cock, one above the other, and the tube through the key is bored at an angle so that when in one position it will draw from the upper tube and when turned around will let off the fuel through the lower tube. The upper tube is extended as far up into the tank as is desired and when the gasoline falls below its level, it is only necessary to turn the key to use the emergency supply.

Acme Pillows and Cushions.

The **Pneumatic Mfg. Co.**, of Brooklyn, N. Y., manufacture a line of cushions and pillows, among which are air mattresses and pillows in various sizes to which life lines are attached, so that they may be used as life preservers in case of necessity. They also make cushions covered with various materials and stuffed with the best imported kapok, which they state will be passed on pleasure boats by the Government inspectors. These cushions may be obtained in plush, artificial leather, corduroy or brown duck, at a cost of from 75 cents to \$1.60 per square foot.

Marblehead Anti-Fouling Green.

This paint, which is manufactured by the **Stearns-McKay Mfg. Co.**, of Marblehead, Mass., is offered this year in two shades—light and emerald—both brilliant, handsome colors. The manufacturers have maintained continuous tests with this product during the last twenty years in order to secure constant improvement, and it is claimed that its powerful anti-fouling and preservative qualities have proved of exceptional value, particularly in southern waters, where hulls are exposed to the ravages of the toredo. Anti-Fouling Cream White has the same powerful qualities, and their Yacht White and Yacht Varnish Black for topsides, and their interior paints are also highly esteemed.

Morris Automatic Oil Indicator.

Geo. W. Morris, of Racine, Wis., has put out the Morris automatic oil indicator, which is intended for installation on the bulkhead in place of a sight feed indicator. The oil from the pump enters at the base of the indicator, and forcing up a double piston arrangement, leaves the indicator through the outlet which is connected to the parts of the engine requiring lubrication. So long as the oil is flowing through the indicator a small plug fastened to a stem whose lower end rests on the upper piston, is projected above the top of a cup at the top of the indicator, but when, from some cause or another the oil ceases to flow, this plug by automatically lowering itself into the cup, gives instant warning to the sight, or by night to the touch, of the stoppage of the oil circulation. This device is stated to be leak-proof, reliable and trouble-proof.

Economic Valve Reseating and Refacing Tools.

The **J. W. Brooke Mfg. Co.**, of 920 East 180th Street, New York City, manufacture Economic valve reseating and valve refacing tools, in response to a demand for efficient tools for keeping the valves of an engine in condition. The reseating tool is furnished with four sets of blades, standard 45 degree angle, for valves of from $\frac{1}{2}$ to $\frac{3}{4}$ inches, and four different sized pilot stems to fit any valve lead, and the grinding of worn or oval valve seats may be done by hand, by breast brace or in a drill press. The cutting faces of the blades are long, so that seats of different size may be ground with one set of the cutting faces. The valve refacing tool is finished with a double-ended cutter, one for 45 degree valves, and the other having an angle of 60 degrees. It is stated that valves refaced with this tool will come positively true with the stems out, that the job can be done by any one in a short time.

OPCO Carbon Remover.

The **American Oil Products Co.**, of 1426 Seneca Street, Buffalo, N. Y., are putting out the OPCO brand carbon remover, for use in cleansing the cylinders of an engine. This carbon remover, which is stated to be absolutely non-injurious to metal, is introduced to the cylinders through priming cups, spark plug taps, or intake manifold. To use this preparation, it is first necessary to warm up the motor by a few minutes' running, after which about four ounces of the liquid are poured into each cylinder and left for about five minutes, at the expiration of which time it is stated that the softened carbon will pass out through the exhaust in a heavy smoke when the engine is again started. The makers recommend that if the engine is heavily loaded with carbon, the carbon remover shall be put in at night and allowed to soak until morning.

Robertson Runabouts.

Robertson Bros., of Hamilton, Ont., produce a complete line of watercraft, and it is possible to purchase their boats as complete outfits, knock-down frames, rough-planked hulls or semi-finished hulls. With this wide choice it is possible for men of varying tastes to be fitted out, and the man whose mechanical ability permits him to do all the work from the rough hull up is as well satisfied as the man who chooses to purchase his boat ready-made. Two boats on which this concern specializes are a 23-foot semi-speed runabout and a 20-foot roomy family runabout. With 8 h.p. installed the former of these will attain a speed of 12 m.p.h., and with 8 h.p. it will develop better than 14. The 20-footer seats ten to twelve comfortably, and is altogether the type of boat desired by those who need a safe, moderate speed runabout for family use.

Curled Hair for Cushions.

Sulzberger & Sons Company, of Chicago, Ill., produce S. & S. sterilized curled hair for upholstering seats, cushions and tops. This hair is antiseptically treated and sterilized by special processes which makes it entirely satisfactory, and the manufacturers state that since they are in a position to obtain the finest horse hair direct from South America, they are able to prepare this product and offer it at attractive prices. The curling process through which the hair is put preserves and improves its natural resiliency, and it is claimed that the S. & S. brand will spread equally and naturally adapt itself to folds, while it will not bulge or sag.

The "Perfect Handle" Valve Lifter.

H. D. Smith & Co., of Plantsville, Conn., are manufacturing the "Perfect Handle" valve spring lifter, which is a strong and practical device for compressing the valve springs of an engine, to permit the easy removing and replacing of the valve. The tool consists of a drop forge hook which is set into the valve chamber and a drop forged lever having a wooden hand grip and two key-hole slots in its shank. A short length of strong chain is attached to the hook, and to raise the valve it is necessary only to lock this chain in one of the slots in the lever at the point where the best leverage may be obtained.

Yard and Shop.



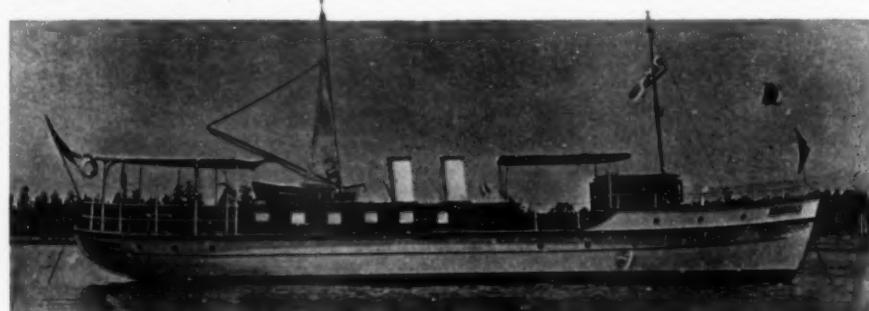
Ormond, a fine runabout, designed by Whitaker, built by Ross, at Orillia, Ontario, and powered with a 100 h.p. Van Bierck.

Rowboat Motors by Northwestern.

The Northwestern Motor Co., of Eau Claire, Wis., realizing the great demand for the popular type of power plant known as "Rowboat motors," is placing on the market a motor of this type, embodying many interesting and novel features. Realizing also that the purchasers of this sort of device are generally people of moderate means, the price of the new rowboat motor has been placed at \$50. This company is also making a specialty of its Mogul engine with lighting equipment, a unique feature of which is the switchboard, 6 by 9 inches square, containing switches for ignition, long distance searchlight, hand lamp, magneto, push button for horn, push button for voltmeter, which is mounted on the switchboard, so that the current output can be followed all the time. This company is putting out a large and complete catalogue, which they are glad to send on application. * * *

Mr. Kimball's Trip.

W. C. Kimball, of Bruns, Kimball & Co., recently made a very interesting trip in his 36-foot boat Sterling, a picture of which appears in this section. Mr. Kimball left New York on July 29 and reached Albany that night. Going by way of the old and new canals, he reached Whitehall on Lake Champlain at 6:30 on the second day. The feature



Langara, a 65-foot yacht, owned by F. A. De Gray, Westminster, B. C., and powered with a 60-70 h.p. Buffalo motor. Speed 11 miles per hour.



Indian, a 23½-foot Deyo "V" bottom runabout, built by the American Launch Co., of Bayonne, N. J., where she is owned. Powered with a 14-h.p. Grimm motor.

of the run was the Montcalm stage, when he covered the 23 miles in exactly one hour, which speaks well for the 30-50 Sterling engine, that drives the boat. From Whitehall Mr. Kimball's boat was loaded on a special wagon and carried across the 100 miles of land and put into Lake George. He then proceeded to his summer home on that lake and spent six weeks there, returning to New York by just reversing his up journey. * * *

Owen Anderson Agent.

J. W. Owen, manager of the Eagle Boat Works, has accepted the Memphis, Tenn., agency for Anderson marine engines, manufactured by the Anderson Engine Co. of Chicago. * * *

Van Bierck Bulletin.

The Van Bierck Motor Co., of Monroe, Mich., are sending out their Bulletin No. 10, which

contains the announcement of the 1915 models of Van Bierck motors. There are full descriptions, with line cut and half tone illustrations and a table showing the various salient features of the motors. * * *

Bruns, Kimball Notes.

Chas. McGowan has taken charge of the Philadelphia branch of Bruns, Kimball & Co.'s business at 608 Arch street. Mr. McGowan was for many years connected with Schaeffer's engine and marine supply department in Philadelphia, and many of his friends in the trade will wish him well in his new field. Wm. Edgar Jones is no longer connected with the Bruns, Kimball organization in any capacity. The Philadelphia branch of this concern announces that an increasingly interesting exhibit will be on view during the coming year, including certain new Sterling models and a most complete line of small four-cycle engines at moderate prices, beside a very attractive showing of Hubbard, Milwaukee, Wisconsin and Northwestern two-cycle

engines. A complete line of Paragon and Standard reverse gears will also be carried as well as carburetors, flange couplings, mufflers, collars, etc., in great variety. * * *

Low-Victor Box.

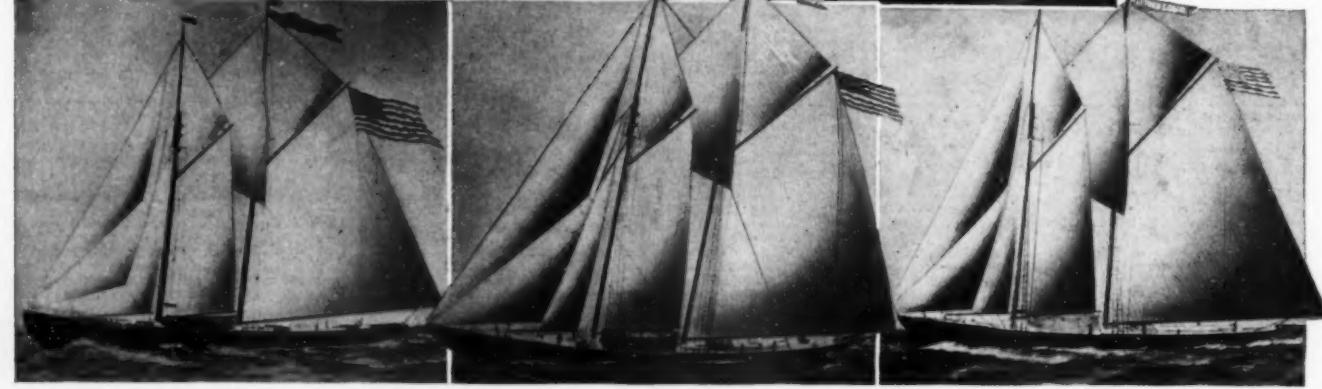
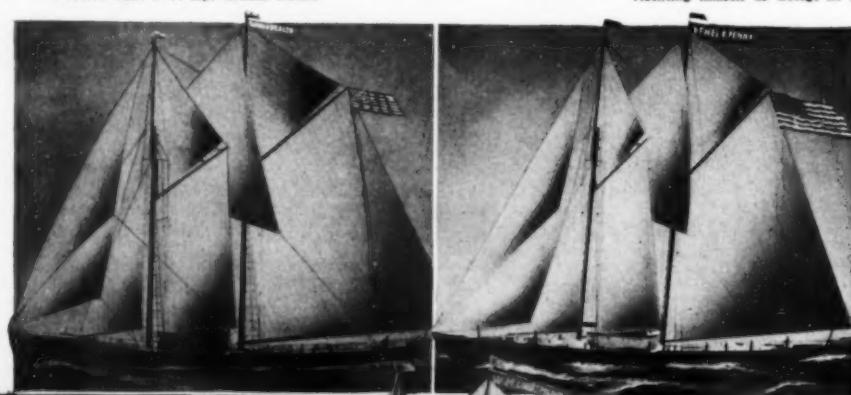
The Low-Victor Engine Co., of Chicago, is very much gratified at the fact that, in a time when war conditions have deranged the business activities in some other lines, they are running full capacity shifts both night and day, building nothing but marine engines. They tell us that they have secured contracts for more business during the past week than they ever had before, and that, although 1914 showed a 25% increase over 1913, they are confident 1915 will show at least 100% over 1914. They are in position to furnish engines in orders, whereas last year the construction of their factory handicapped them. This company informs us that Bowes & Mower have just given them the contract for two special 6-cylinder 200 h.p. Low-Victor Harbeck engines to be installed in a 72-foot cruiser being built for G. W. C. Drexel. The Low-Victor Company has just added to its distributing force the Banner Island Boat Works, Stockton, Cal., and the Sacramento Boat Co., Sacramento, Cal. * * *

Bosch Test.

When Disturber IV recently averaged 57.2 miles per hour over a fifteen mile course on Lake Michigan, she was fitted with Bosch plugs and magnetos. This was not just a single test, but 12 minutes and 96 plugs were called on to bear the strain of this tremendous trial. * * *

Beware of This Man.

L. W. Ferdinand & Co., of Boston, wish to give wide publicity to a recent swindling operation. A man representing himself as George E. Barnes, of the Motor Boat & Supply Co., of Cleveland, customers of Ferdinand, recently called up L. W. Ferdinand at his residence and asked if he could see him for a few moments. After reaching the house this man told Mr. Ferdinand that he was a member of the company mentioned and that he was on his wedding trip, during which he had been robbed of his watch and pocketbook. He appeared to know the men in the company, whom he mentioned and asked to borrow \$20, which amount he was given. The Motor Boat & Supply Co. have since advised Mr. Ferdinand that no such person is connected with them. This man seemed to be about 35 years old. 5



Five notable schooners of the Boston fishing fleet, equipped with Automatic 4 cycle heavy duty engines. Pontiac, Ethel B. Penny and W. M. Goodspeed have each two 37½ h.p. engines, while Commonwealth and Mathew B. Greer have each two 50 h.p. motors.

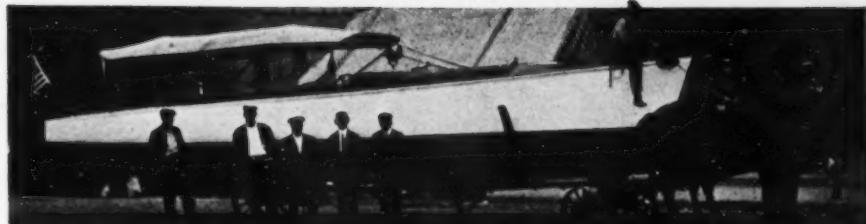
feet 7 or 8 inches tall, smooth face, brown hair, light olive complexion and rather a slow, hesitating talker with a good appearance.

No-Bo Expanding.

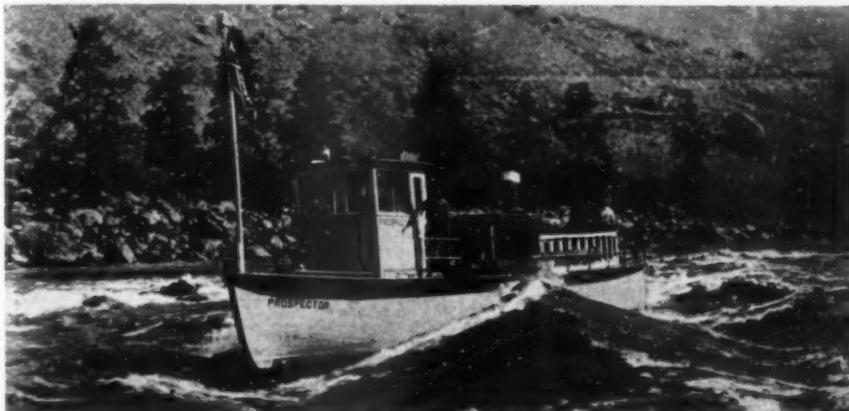
The No-Bo Motor Works, of West Roxbury, Mass., informs us that they have closed contracts for selling rights on their products in Australasia, Japan, China, the Philippines, Dutch East Indies and other Asiatic countries. They are negotiating to close rights covering the British Isles, Italy and other European countries, having already closed the Canadian Northwest Territory. Here is a firm that is not dismayed by the war and which obviously believes in expansion.

Partnership Dissolved.

Harry H. Kramm and John S. Martin, of Atlantic City, N. J., trading under the name of the Auto Marine Supply Co., have dissolved partnership. All debts owing to the partnership and all obligations are to be paid to and be liquidated by John S. Martin, who will continue the business



Sterling, a 36-footer, in which W. C. Kimball, of Bruns, Kimball & Co., recently made a trip from New York to Lake George. The boat is driven by a Sterling 30-50 h.p. engine.



Prospector, in the rapids of Rush Creek, Washington. The boat is driven by two 100 h.p. Scripps motors.

at Massachusetts and Adriatic avenues, under the old trade name.

New Van Blerck Agency.

The Van Blerck Motor Co., of Monroe, Mich., have appointed the Markt & Hammacher Co., of New York City their agents to handle Van Blerck medium duty and high speed motors in Japan, China, Straits Settlements and India.

New Anderson Agents.

The Anderson Engine Co., of Chicago, announce the appointment of the following new distributors: Wright Bros. Hardware Co., Vicksburg, Miss.; F. J. Coleman, of the Motor Boat Exchange, Eleventh and O Streets, Southeast, Washington, D. C.; H. C. Turley, Natches, Miss.

Columbian Propeller Victory.

The Columbian Brass Foundry, of Freeport, L. I., is extremely proud of the fact that the championship of Currituck Sound was recently won by a boat equipped with a Columbian weedless propeller. They believe that this verifies admirably their claim for unusual speed possibilities by this device.

Ocean Traffic Book.

La Salle Extension University in Chicago, sends us a copy of Ocean Traffic and Trade by B. Oliver Hough. This large and handsomely gotten up volume deals with every phase of ocean traffic, practical, legal and otherwise. For those interested in this timely subject, the volume will prove endlessly useful. It's timeliness, just when America seems to be embarking on an era of export expansion, is notable.

Consolidation.

The consolidation has been announced of the Racine Boat & Auto Co. and Seattle Boat & Engine Co., of Seattle, Wash., under the name of Chandler-Dunlap Boat Co., into what is described as "the largest and strongest boat, engine and accessory house in the Pacific Northwest."

Sterling Folder.

The Sterling Engine Co., of Buffalo, N. Y., is issuing a handsome folder, covering Sterling engines in their varied field of activity. Descriptions of the engines, views of racing scenes, etc., etc., make the leaflet unusually interesting.

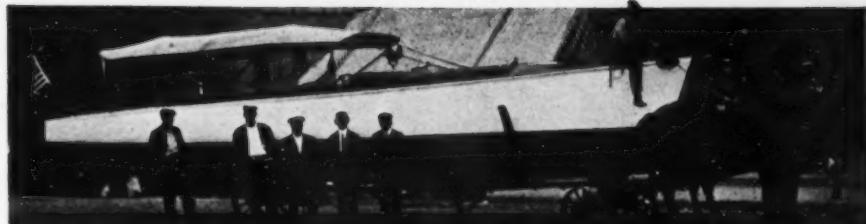
Spark Plug Makers Combine.

The Champion Spark Plug Co., of Toledo, Ohio, have taken in the Jeffery-DeWitt Co., and are now manufacturing and marketing all J-D plugs.



Two views of Namima, a 38-foot runabout, built Ont., and powered Van Blerck.

38-foot runabout, built Ont., and powered Van Blerck.



Namima, a 38-foot runabout, built Ont., and powered Van Blerck.

very much pleased with the boat and motor and have asked me to write to you and express their great satisfaction." Signed, Charles Winkler, Manager.

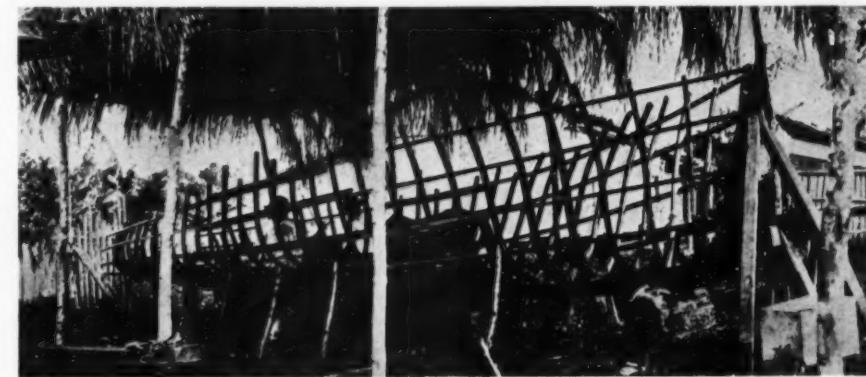
Ferro Banquet.

The Ferro organization in Cleveland boasts several well developed baseball nines. A championship is contested annually in the organization and this year was won by the White team. The runners-up were the Blue team and they tendered a banquet to their conquerors. A delightful event it proved and by the way of dessert, all adjourned to the theatre, the party being given by the company toastmaster, Mr. Giebley.

The Shows.

The 1915 New York National Motor Boat Show will be held in Madison Square Garden, New York City, opening on Saturday, January 30th, and closing Saturday, February 6th. The exhibits of boats and motors will show a wonderful advance in construction and design over those shown at any previous exposition. The very latest ideas in the building of boats, from the "mile-a-minute" newest types of hydroplanes to the luxuriously appointed, yet economical, cruisers, will be shown in varied assortments under the roof of the historic old Garden. Motors that no longer contain any element of uncertainty but which, in different sizes and designs, can be absolutely depended upon to do the work allotted to them, whether it be driving a speed boat through the water at over 50 miles an hour or propelling, with ease, the largest yacht built, will be on view before the discriminating public.

Another announcement of unusual interest is to the effect that the National Association of Engine & Boat Mfrs., under whose auspices these National Shows are held, will pay, for all exhibiting members in either the New York or Chicago Motor Boat Shows of 1915, transportation charges covering costs of freight shipments to these shows and return to original point of shipment, including trucking and handling charges between freight terminals and the exhibition buildings in New York and Chicago. This plan will place the manufacturer whose plant may be located a thousand



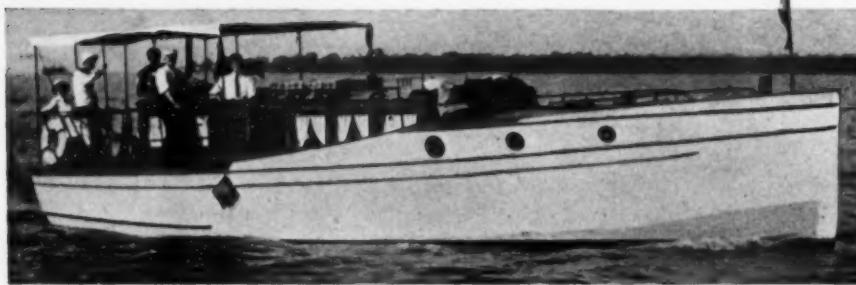
A 38-foot speedway runabout in course of construction in Mexico, from designs furnished by the Gas Engine & Power Co. and Chas. L. Seabury & Co., of Morris Heights, N. Y.

towed two and three New York 38-footers at once and made good time. Easy to handle as is also the motor, which has run all summer without hitch and uses but little gasoline for the amount of work done. The officers of the club are

sand miles or more from New York or Chicago, absolutely on a par, so far as the expense of exhibitions are concerned, with those whose plants are located in or adjacent to these cities.



Freight boat Edna, of Portland, Ore. This 85 1/2-foot craft is driven by a 100 h.p. stove distillate burning Wolverine engine.



This 42-footer, driven by a 4-cylinder 36 h.p. Vim motor, giving her a speed of 11 m.p.h., is now on a 9,000 mile round trip from Cleveland, Ohio.

The Chicago National Motor Boat Show will open at the Coliseum, Chicago, Ill., on Saturday, February 27th, and will close Saturday, March 6th. The slogan for these two immense motor boat shows of 1915 will be "We Pay the Freight."

Ormond. An excellent example of the growing popularity of the fast runabout type of boat is the presence in Canadian and American waters of numerous craft such as Ormond, the winner of the Canadian National Exhibition Displacement Trophy for 1914. She was designed by Morris M. Whitaker, of Nyack, N. Y., and was built by the J. C. Ross Boat Company Co., Ltd., of Orillia, Ontario, and equipped with a Van Bierck, 100 h.p. runabout motor. Thirty miles an hour is the regular clip for this graceful boat with her Van Bierck Six turning over at 1200 r.p.m.; however, on her trial trips, before her equipment was put aboard, she covered a measured mile at the rate of thirty-two miles an hour.

Ormond is finished in African mahogany, with white freeboard and marine bronze below the waterline, and a red boot top. When running at full speed her keel shows for a distance of about five feet, bringing all spray low down and well astern, which justifies this splendid boat's claim to the title "dry craft." The deck fittings are all standard make, of the latest design and nickel plated, including running lights, searchlight, electric horn and 12-inch ventilator. The interior is roomy and comfortable, affording accommodations

The boat is 42 feet long, 10 feet 6 inches beam and has a capacity of fifteen tons. It is most completely furnished and equipped with the best of everything, having been built at a cost of \$4,200. A 4-cylinder Vim motor—36 horsepower—gives it a speed of not quite eleven miles an hour. The selection of this motor for a trip which bids fair to show some excitement, to say the least, is made by Mr. Bigelow with entire confidence.

Government Tenders.

A 35-foot motor boat on trial order a government course at Rockland, Me., recently made a remarkably good record, and four of these boats have just been delivered to the government by the Camden Anchor-Rockland Machine Co. They are tremendously heavy boats with a 5% tons displacement and to obtain the 15 knots contract speed, called for an engine of heavy duty type to develop not less than 100 h.p. at 650 r.p.m.

These boats are a splendid example of the type of boats Uncle Sam uses in his Navy as tenders. They are 35 feet long, extreme beam 8 feet 9 inches, with a draft of 4 feet 3 inches, built absolutely under government specifications with the heavy construction which they demand and need owing to the very rough usage these boats get—are of the double cockpit type, the helmsman being forward in a pro-



Thoroughbred, an 18-foot stepless hydroplane, powered with a Model F 4-cylinder, 28 h.p. Red Wing Thoroughbred motor, which gives her a speed of 25 to 28 m.p.h. The Red Wing Co. offers free plans of this boat to purchasers of Thoroughbred motors.

for ten passengers, including the driver. A stern seat and driver's seat are panelled in and upholstered in high grade leather, while the cockpit is provided with Wickerkraft chairs. Mounting the bulkhead at the after end of the engine compartment is a nickel-bound windshield, matching the

steered cockpit with his controls brought to his hand. The after cockpit being partially covered with a padded top house is used by the landing party. Against heavy weather a waterproofed khaki boot covers the rest of the cockpit from the house aft. The engine compartment is bulkheaded off forward and aft with double thickness steel bulkheads, watertight. It is entirely lined with bronze and contains necessary tools, battery and spare lockers.

The tanks are under the after cockpit floor and are pumped up to the running tanks in the engine room. The engine is a six-cylinder 6½x8 Model D 3 Sterling, with the overhead intake valves. To quote the captain of a well-known houseboat while watching the launching of the first boat, "I would rather drive my boat 15 knots than that one. I believe it could be done easily our engine is sure up against some proposition."

And yet a speed of 15.2 knots was obtained with an engine speed of 647 r.p.m. The propeller aperture only allows 34-inch diameter. A Hyde 3 bladed 34-inch by 40-inch wheel was used.

Scripps in England. The strong position won by American gasoline

Plant of the Northwestern Motor Co., at Eau Claire, Wis. This concern is now making a specialty of runabout motors.

auto top, which is also nickel-trimmed. Within easy reach of the driver, while sitting at the mahogany wheel, are all the controls, mounted on the bulkhead, including light switches, electric horn and electric self starter.

Namima.

One of the finest and most complete runabouts of the present season is the 28-foot Namima, built the early part of this summer by the H. C. Minett Motor Boat Works, of Bracebridge, Ontario, for Mr. W. A. Shaw, of Pittsburgh, Pa., and powered with a 100 h.p. Van Bierck runabout motor. Constructed along the lines of genuinely serviceable weight and with the liberal beam measurement of 6 feet 6 inches she is plainly a distinct Minett design. The speed and comfort of this delightful craft reflect much credit to both the Minett Boat Works and the Van Bierck Motor Co., of Monroe, Mich., for steadiness, dryness, quietness and reliability.

The hull is single planked with mahogany, copper riveted to white oak frames, placed conservatively close. The Minett composite stem is among the most notable features of construction. The decks are of the finest grained mahogany, polished to a mirror finish. The deck fittings are all nickel, including built-in running lights, an ample ventilator and electric horn.

9,000 Miles in a 42-Footer. Marshall B. Bigelow is the big chief skipper of the 9,000-mile boat. He lives in Cleveland, from which city the start was made a few weeks ago. With Mr. Bigelow on the unusual journey are his two sons, Harry T. Bigelow and Mark M. Bigelow, and Leslie Schuyler.

The travelers will not get back until next summer, as their itinerary is planned to take them, first to Chicago, by Lakes Erie, St. Clair, Huron and Michigan, then through the new drainage canal to the Mississippi River, down the Mississippi to the Gulf, to Florida and Cuba, up the Atlantic Coast to New York, then to Albany by a short but delightful trip up the Hudson, across the State via the Erie Canal to Buffalo, and home to Cleveland on the lake.

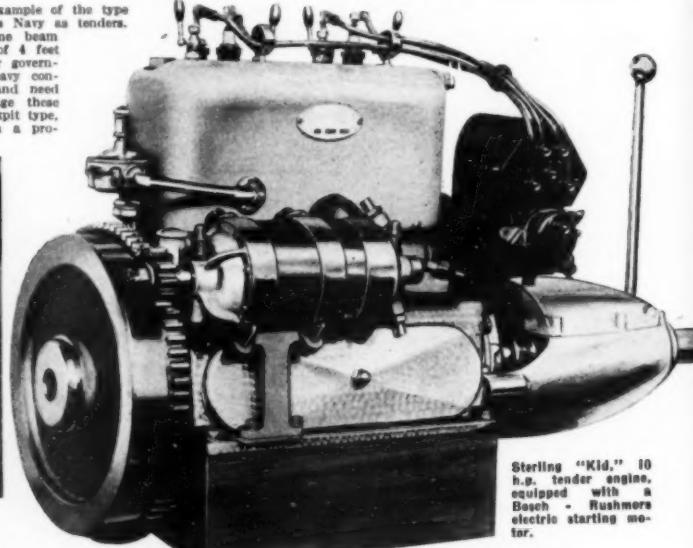
motors in England, is indicated by an order from the British government for two Scripps Model "K" motors for quick delivery, acknowledged by the Scripps New York port department September 1st. These were purchased by the British government to drive a launch in the east coast of Scotland. The selection of American-made motors for war-time duty where reliability and power are such strong factors in influencing the choice of motor, is especially significant when the number of marine motors manufactured in England and the conservatism of the English government in ordering foreign-made goods of any nature, is considered. When the war is over this remarkable endorsement of, and tribute to, the American-made Scripps motors by Great Britain will be an effective point in the selling campaign of the American motors abroad.

Since the cruise of Scripps III across the Atlantic, from Detroit to St. Petersburg, the Scripps motors have enjoyed strong favor abroad, particularly in England and Scotland, and Russia. This order from the English government makes the eighth foreign government to install the Scripps motors in their marine service.

Partnership Dissolved. Announcement is hereby made that the partnership lately subsisting between Edward J. F. Coleman and Leonard R. Coleman, and carrying on business at numbers 308-312 South Water street, in Providence, R. I., under the firm name and style of E. J. F. and L. R. Coleman, was on the 8th day of October, A. D. 1914, dissolved by mutual consent. All debts and liabilities of the said partnership will be paid by Leonard R. Coleman, who will also receive all moneys payable to the said late firm.

The business—which has been reorganized—will in the future, with the exception of manufacturing, be carried on by Leonard R. Coleman, under the firm name of Walter Coleman & Sons.

Mr. E. J. F. Coleman will take over the business of manufacturing formerly conducted by the partnership, and continue the same as a separate enterprise, marketing his products through the new firm of Walter Coleman & Sons, as selling agents.



Sterling "Kid," 10 h.p. tender engine, equipped with a Bosch - Rushmore electric starting motor.

Mianus in British Navy.

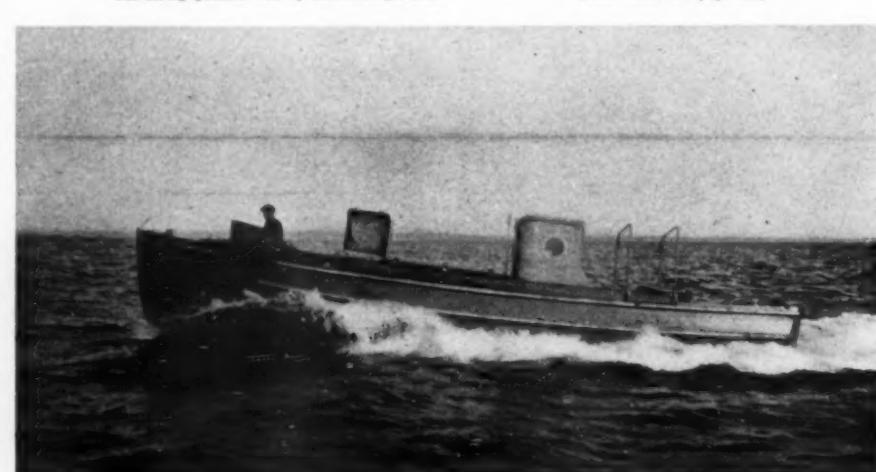
A Mianus equipped cruiser is the first boat selected for the Royal Naval Motor Boat Reserve, in the Admiralty service.

Ulex, a cruiser 30 feet in length, with 9-foot beam, 2-foot 9-inch draft, is the boat in question. Ulex is propelled by a 7½ h.p. two-stroke Mianus engine. Her Admiralty number is 49. E. D. Thorpe, the owner, has received his commission in the Royal Naval Motor Boat Reserve.

Loew-Victor Service.

W. J. Condron, well and favorably known to the trade through his connection with several of the large oil companies in the past few years, is now resident factory representative of the Loew-Victor Engine Co., of Chicago. Mr. Condron is making his headquarters in Seattle, and is traveling up and down the coast, working with the various Loew-Victor distributors. In addition to several of the well known firms that have handled Loew-Victor engines the past few years, Mr. Condron has just made arrangements with the well known ship chandlers of San Francisco, Messrs. G. M. Josselyn & Co., of 56 Sacramento street, for the distribution of Loew-Victor engines in San Francisco and vicinity. They are carrying a large stock of engines and repair parts.

(Continued on page 86)



A 35-ft. motor barge built for the U. S. Government by the Camden Anchor-Rockland Machine Co., from Swasey's design. She is powered with a six-cylinder Sterling, driving a Hyde, three-blade propeller, and showed a speed of 15.2 on trial.

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YACHT BROKER
220 BROADWAY, N. Y.
(ESTABLISHED 1900)

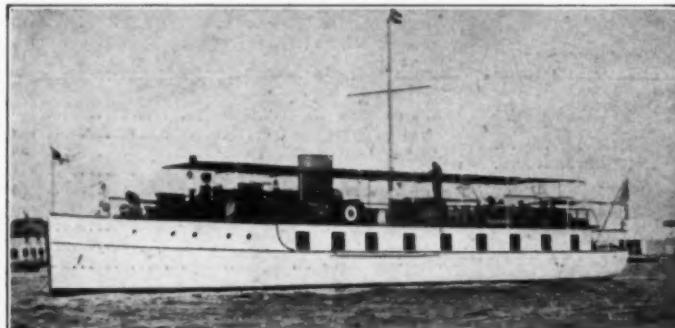
TELEPHONES 3479-3171 CORTLANDT

BRITISH CORRESPONDENT

CABLE, "HUNTSEA," N. Y.

[MARINE INSURANCE

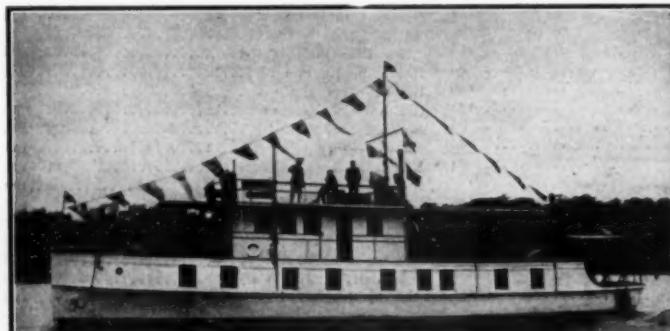
All the best craft, every size and type, available for Sale and Charter. Full particulars upon request. Handsome Illustrated Yacht List showing 200 photographs sent free to buyers.



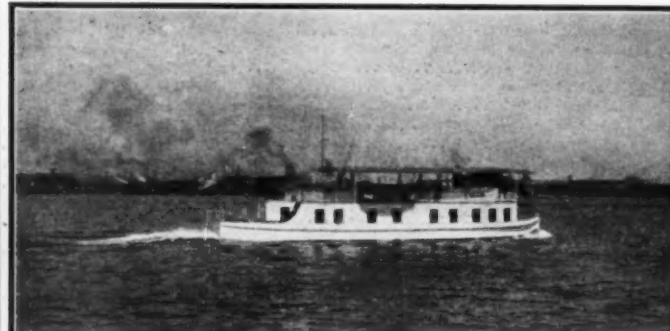
7421.—For Sale or Charter.—Twin-Screw. 90 x 17 x 3.3 ft. 3 double staterooms. Bath. Speed 12 miles. All modern conveniences.



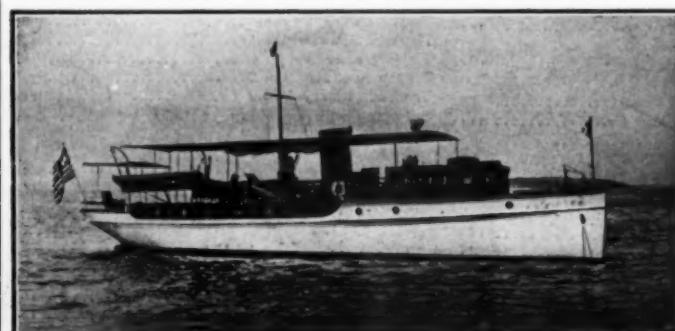
7800.—Twin Screw 80-foot Elco Cruiser. 3½ ft. draught. 3 staterooms. Bath. Speed 13 miles. Perfect condition.



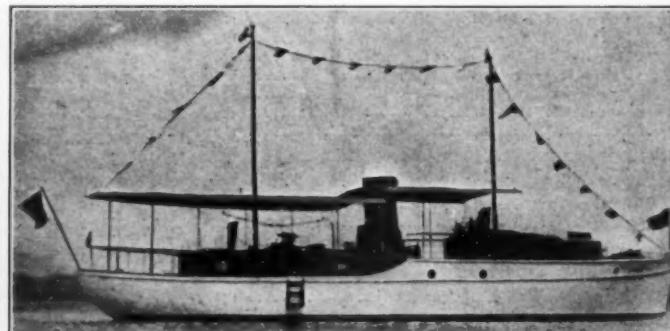
7786.—Twin-Screw. 78 x 18½ x 2½. 4 staterooms. Bath. All modern conveniences.



7831.—For Sale or Charter.—70 x 18½ x 2. 3 staterooms. Bath. In commission Jacksonville, Fla.



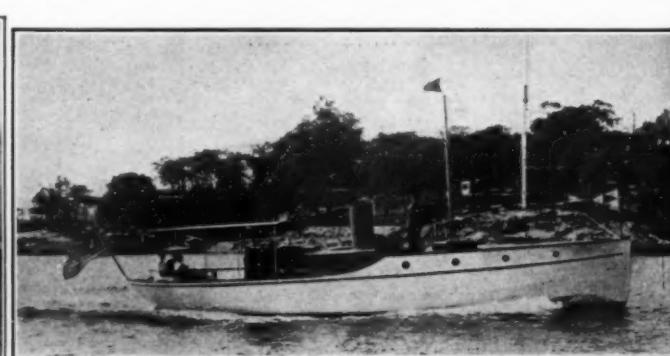
7679.—63 ft. Coast Cruiser. Launched 1913. Practically new. Elegant condition. Low price.



7709.—55 ft. Cruiser. Launched 1913. Two staterooms. Standard motor. Low price.



7894.—50 x 12.10 x 3. Sleep six. Two 35 h. p. Standards. New 1914. Fine sea boat. Ideal for Florida.



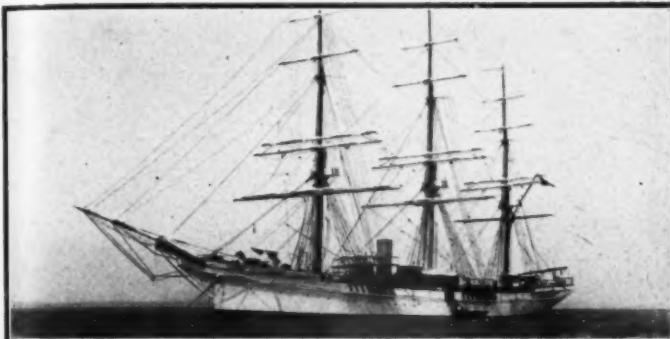
7747.—45-foot Cruiser. Launched 1913. Speed 12 miles. Bargain.

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COX & STEVENS

The illustrations below show merely a few typical vessels. We have many other available for sale and charter. Full particulars and plans mailed on request.

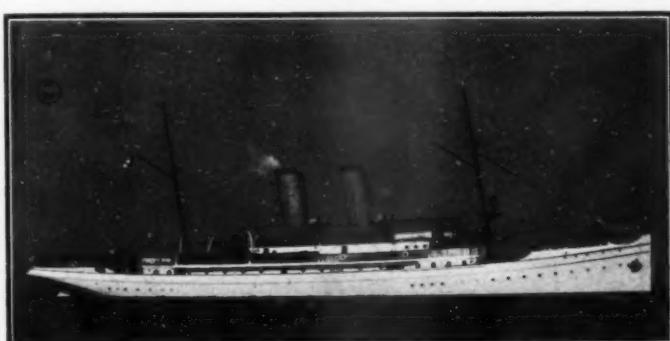
Many steam yachts, particularly of large size, are available at very low prices. We will give you detailed cost of any cruisers you may wish to make, with full particulars. This winter and next spring the trip through the Panama Canal and along the Pacific Coast will be of especial interest. The duty having been removed on foreign-built yachts, they are now really good investments at prevailing prices.



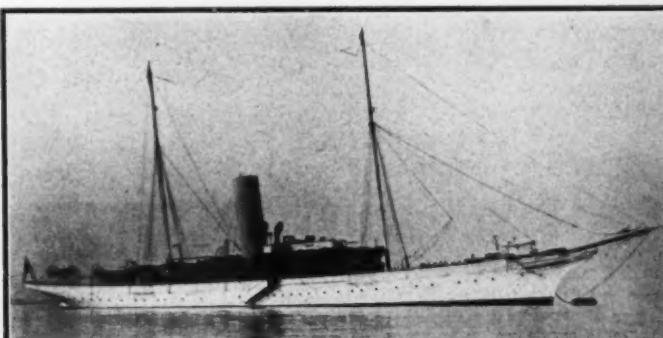
No. 31—1500-ton (about) auxiliary steam yacht. Superb vessel, beautifully furnished, completely equipped. Ideal craft for voyage around the world. Has nine very large staterooms, four baths and ample room for servants. Terms moderate. Cox & Stevens, 15 William Street, New York.



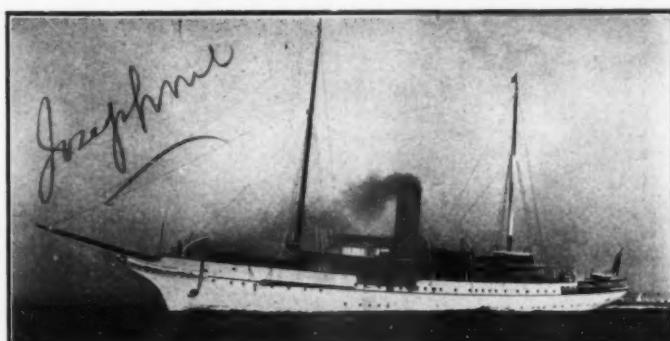
No. 149—1500-ton (about) sea-going steam yacht, with auxiliary sail plan particularly suited for extended cruising. Beautifully appointed, excellent accommodation. Economical on coal. Terms reasonable. Cox & Stevens, 15 William Street, New York.



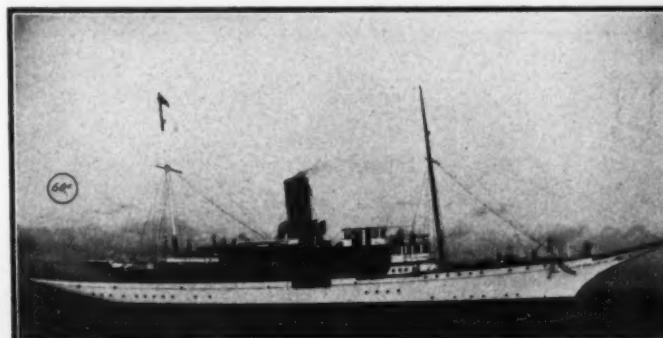
No. 124—1400-ton (about) modern steamer type steam yacht, unusually strong construction, large bunker capacity, magnificent seaboat. Quarters well laid out, equipment complete. Price reasonable. Cox & Stevens, 15 William Street, New York.



No. 5—1000-ton (about) seagoing steam yacht, Watson design, exceptionally able, well found, classed 100 A-1 Lloyds. Has eight large staterooms and four baths for owner and guests, also quarters for servants. Price extremely low. Cox & Stevens, 15 William Street, New York.



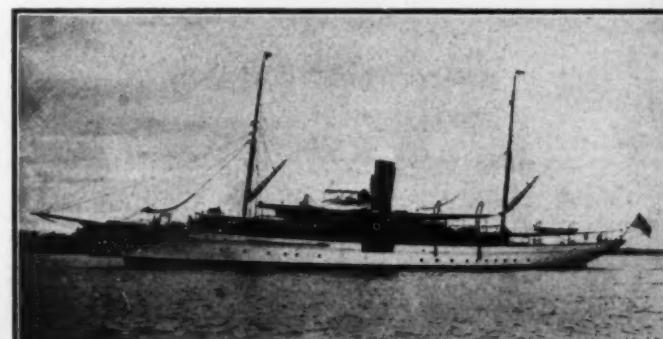
No. 2113—900-ton (about) seagoing steam yacht in superb condition. Completely found, handsomely decorated, good speed. Has 12 staterooms and six baths for owner and guests. Price moderate. Cox & Stevens, 15 William Street, New York.



No. 60—900-ton (about) superb modern steam yacht, most unusually attractive interior arrangement, excellent seaboat; good speed. Has eight large staterooms and three baths, also quarters for servants. Terms reasonable. Cox & Stevens, 15 William Street, New York.



No. 199—600-ton (about) high-speed steam yacht, fastest of her type, good accommodation. Excellent condition. Has seven attractive staterooms and four baths. Price very low. Cox & Stevens, 15 William Street, New York.



No. 341—500-ton (about) seagoing modern steam yacht, best vessel of her size. Good seaboat, economical to operate. Well arranged. Condition perfect. Has eight staterooms and five bathrooms. Price attractive. Cox & Stevens, 15 William Street, New York.

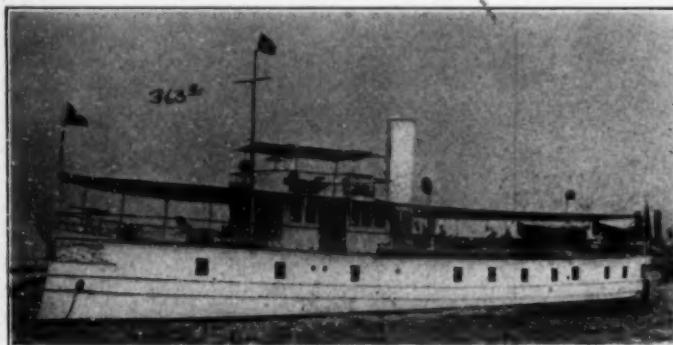
Naval Architects
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Telephone—1375 Broad.
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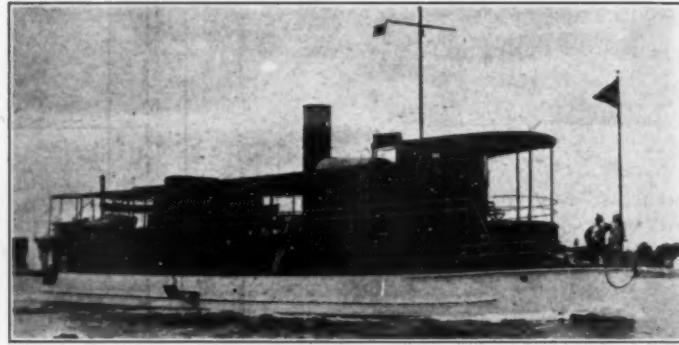
The illustrations below show merely a few typical vessels. We have many other available for sale and charter. Full particulars and plans mailed on request.

This page contains some of the most desirable houseboats, and we have a number of others. Naturally they are particularly adapted for cruising in the South, but some of them are also well adapted for general use along the Atlantic Coast. In these boats the rooms are all large, the headroom good and the ventilation all that can be desired.



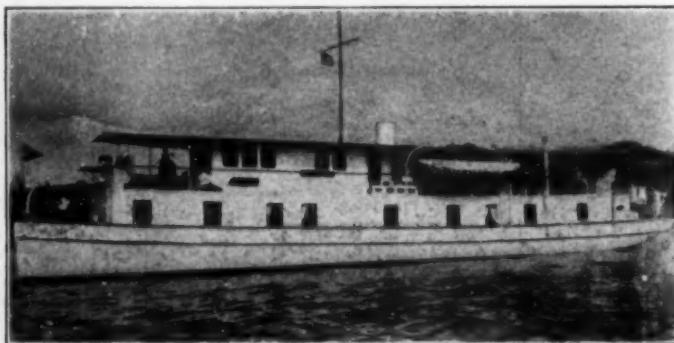
No. 363—116-ft. steel houseboat. Splendid accommodation. Luxuriously furnished. All conveniences. Separate bath each stateroom. Most desirable.

Cox & Stevens, 15 William Street, New York.



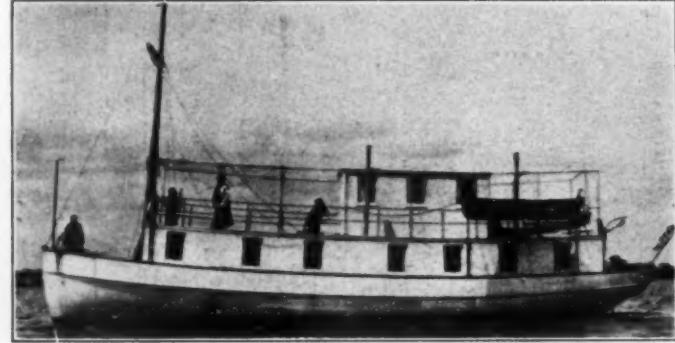
No. 346—115-ft. steel houseboat. Speed 12 knots. Six staterooms. Handsomely furnished. Ideal for Florida cruising on account extremely shallow draft.

Cox & Stevens, 15 William Street, New York.



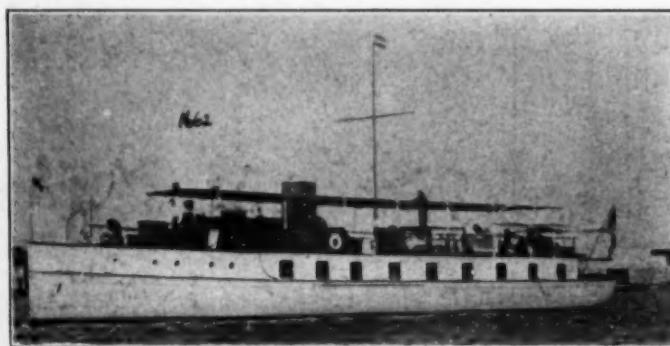
No. 2017—77-ft. twin-screw houseboat. Speed 12 miles. Four double staterooms; large dining saloon on deck. Very light draft makes her specially suited for shoal waters.

Cox & Stevens, 15 William Street, New York.



No. 448—64-ft. houseboat. Speed 7½ knots. Four staterooms, bath, etc. Large sitting room on deck. Very strong hull. Good, able vessel.

Cox & Stevens, 15 William Street, New York.



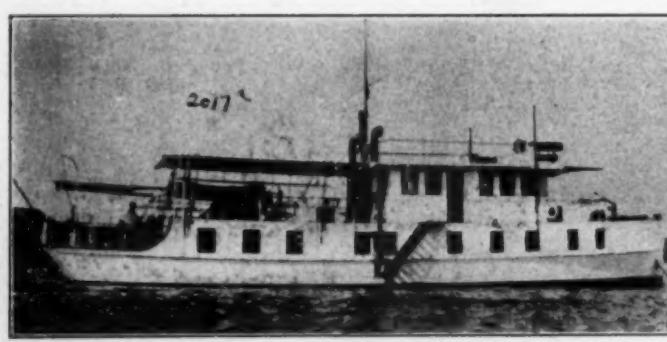
No. 345—106-ft. twin-screw houseboat. Light draft. Four double staterooms, large main and dining saloons, etc. Particularly adapted for Florida waters.

Cox & Stevens, 15 William Street, New York.



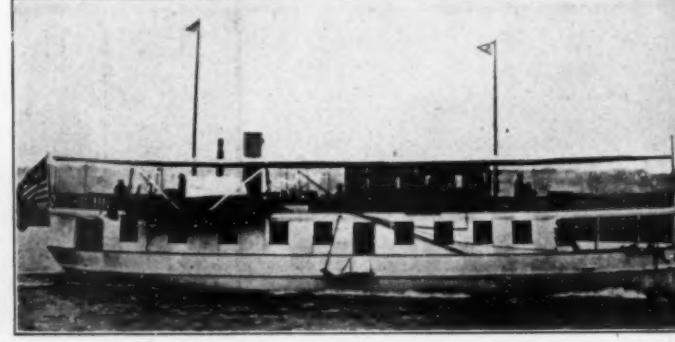
No. 2100—95-ft. twin-screw modern houseboat. Speed 13 miles. Four double staterooms. Suitable for Coast use as well as Florida service.

Cox & Stevens, 15 William Street, New York.



No. 1662—90-ft. twin-screw houseboat. Speed 11-12 miles. Large accommodation. All conveniences. Dimensions allow navigation of Erie and other canals.

Cox & Stevens, 15 William Street, New York.



No. 367—85-ft. twin-screw houseboat. Large social hall on deck, dining saloon and three double staterooms below forward. Speed 10 miles.

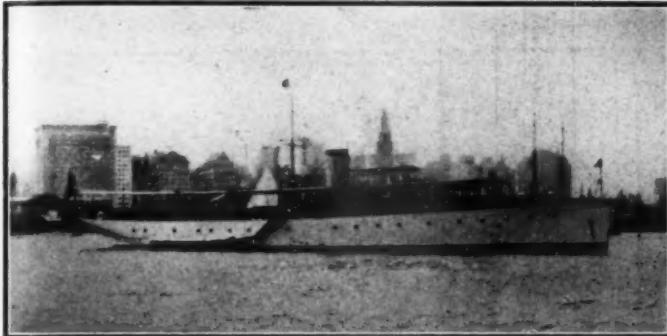
Cox & Stevens, 15 William Street, New York.

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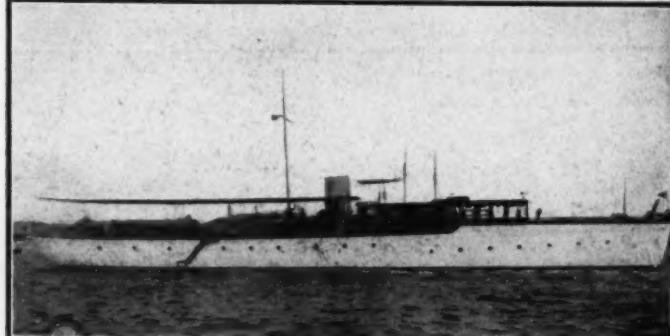
COX & STEVENS

The illustrations below show merely a few typical vessels. We have many other available for sale and charter. Full particulars and plans mailed on request.

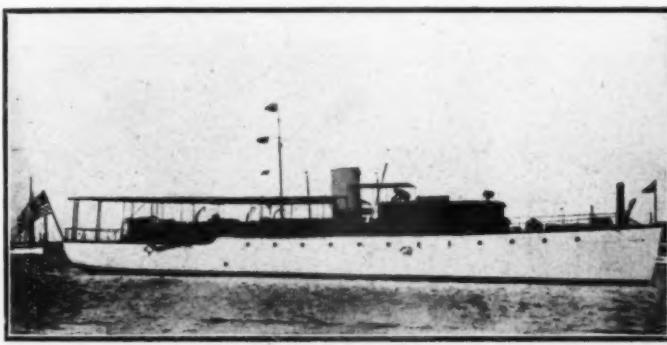
Large motor yachts are becoming more and more popular. The price of gasoline is now very moderate. We have a number of modern vessels of this type suitable not only for coastwise work but for extended cruising. Some have as good accommodation as in large seagoing steam yachts, and cost much less to operate.



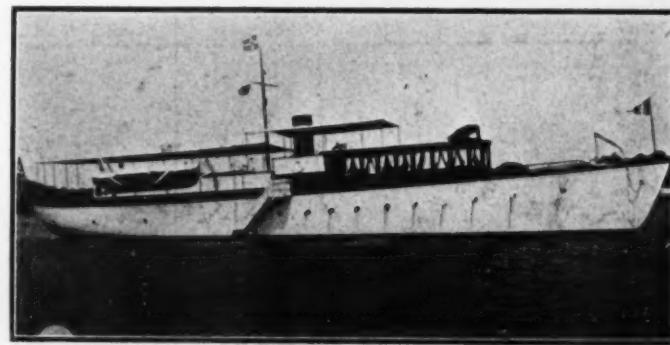
No. 2398—120-ft. twin-screw steel cruising power yacht. Built 1913. Speed 14-16 miles. Large dining saloon forward; five staterooms, two bathrooms and saloon aft. Splendid craft for coast service, Great Lakes, etc. All conveniences. Cox & Stevens, 15 William Street, New York.



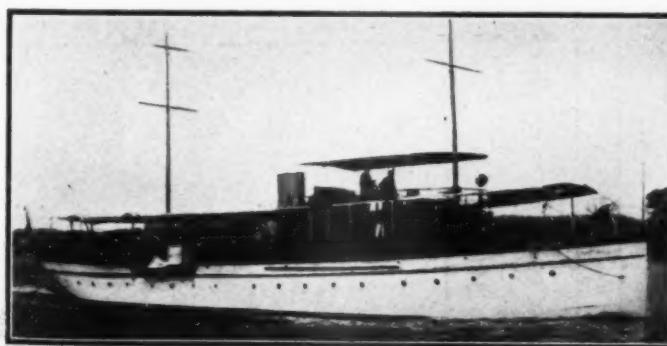
No. 885—Fast 118-ft. twin-screw steel cruiser. Speed up to 18 miles. Dining and main saloons, three double staterooms, two bathrooms, etc. Fine seaboat; adapted for Coast service, West Indian cruise, etc. Our design. Cox & Stevens, 15 William Street, New York.



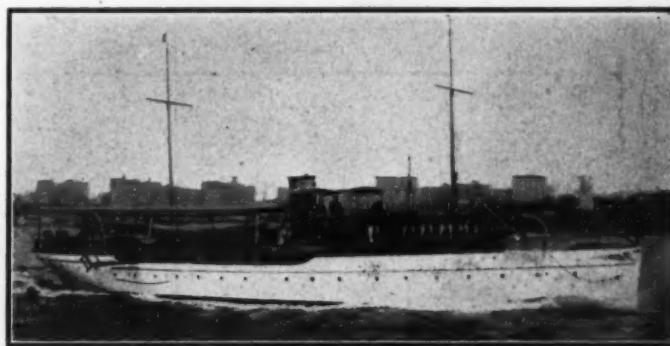
No. 463—110-ft. twin-screw steel power yacht. Speed 13-14 miles. Large dining and main saloons, four staterooms, etc. All conveniences. Designed for off-shore service. Cox & Stevens, 15 William Street, New York.



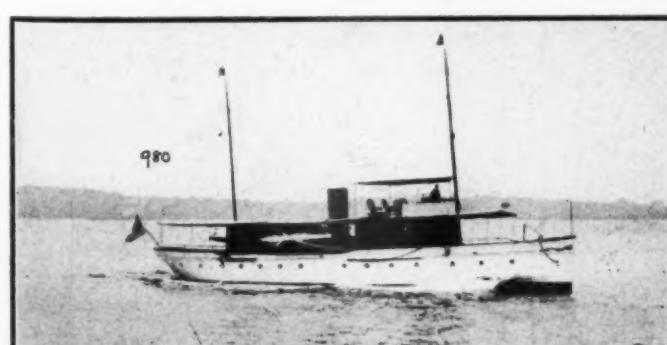
No. 2026—107-ft. twin-screw cruising power yacht. Speed 11 knots. Built 1912. Four staterooms, large dining saloon, library, etc. Handsomely furnished. Economical to operate on account moderate power. Cox & Stevens, 15 William Street, New York.



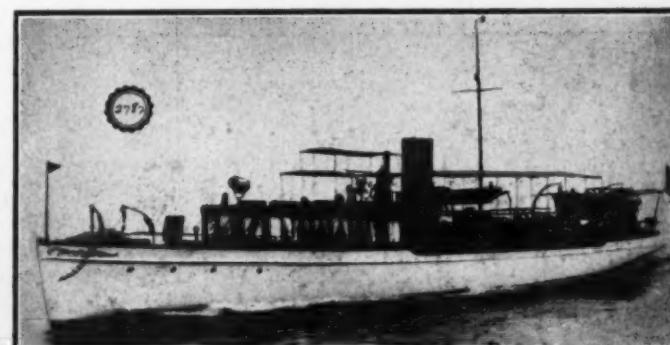
No. 1796—99-ft. twin-screw cruiser. Speed 13½-15 miles. Exceptional accommodation; six staterooms, three bathrooms, large dining saloon, etc. Especially adapted for Florida service as well as Coast use on account of her light draft. Our design. Cox & Stevens, 15 William Street, New York.



No. 1820—98-ft. twin-screw power yacht. Speed up to 15 miles. Unusual accommodation includes large dining saloon, five staterooms, two bathrooms, etc. Light draft; suitable for Florida and Coast service. Our design. Cox & Stevens, 15 William Street, New York.



No. 980—98-ft. steel twin-screw cruiser. Speed up to 15 miles. Social hall and dining saloon on deck; four staterooms. Handsomely finished and furnished. Very able craft. Our design. Cox & Stevens, 15 William Street, New York.



No. 2782—99-ft. fast twin-screw power yacht; speed up to 19 miles. Dining saloon forward; three staterooms, bath, etc., aft. Desirable for ferry service and moderate cruising. Cox & Stevens, 15 William Street, New York.

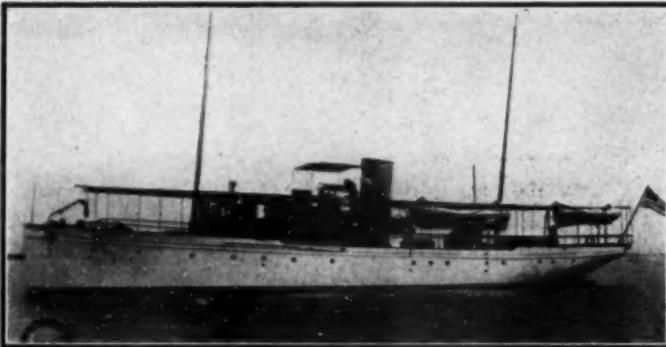
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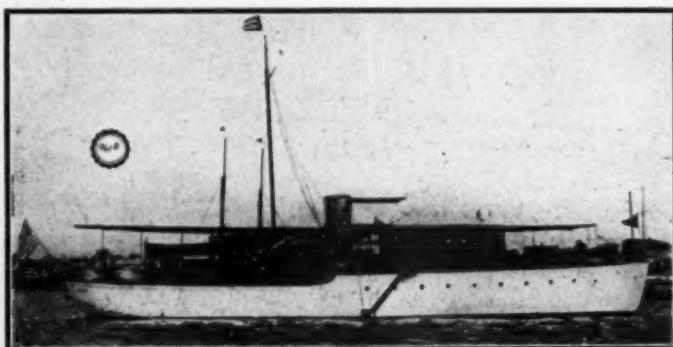
Motor yachts of the size illustrated on this page are large enough and able enough for extended cruising, and yet are very economical to operate. Many are particularly adapted for Florida work, others for deep water cruising. We will send you details of trips to Florida, giving cost, time, places visited, etc.



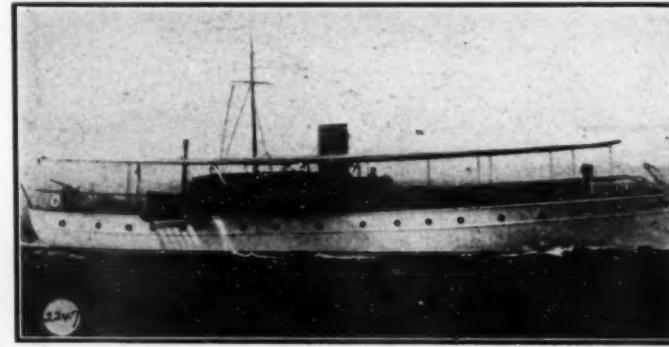
No. 883—94-ft. cruising power yacht. Speed 14-16 miles. Excellent accommodation. Built for off-shore service. Large deck space. Cox & Stevens, 15 William Street, New York.



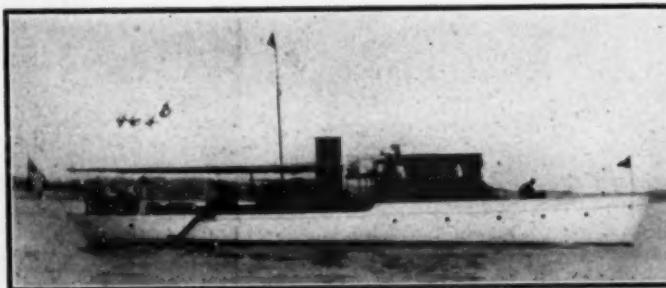
No. 606—90-ft. flush-deck cruiser. Speed 12 miles. Three double staterooms, two bath-rooms, dining and main saloons. Splendid seaboat. Our design. Cox & Stevens, 15 William Street, New York.



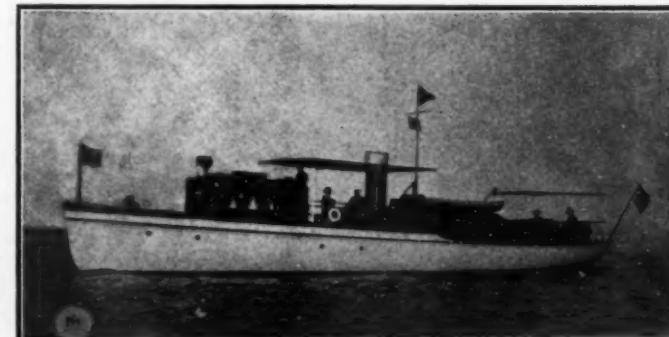
No. 961—90-ft. twin-screw power yacht. Speed 12-14 miles. Large accommodation; all conveniences. Our design. Cox & Stevens, 15 William Street, New York.



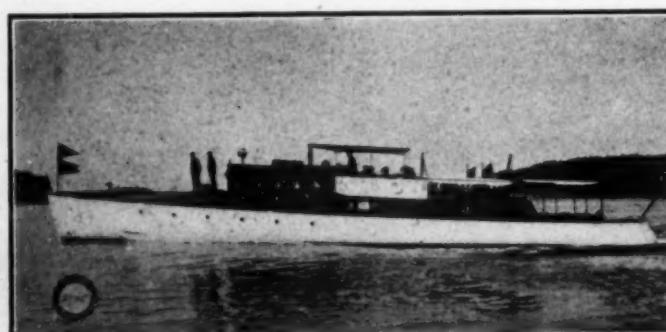
No. 2247—90 ft. flush-deck, twin-screw cruiser. Speed 13-14 miles. Three staterooms, two saloons, etc. Excellent seaboat. Cox & Stevens, 15 William Street, New York.



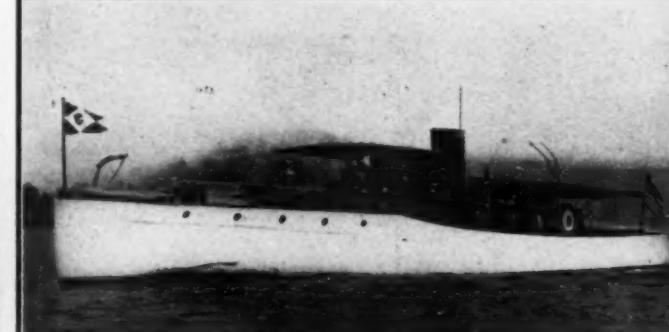
No. 464—81-ft. gasoline cruiser. Speed 13-15 miles. Two staterooms, dining and main saloons, shower bath, etc. Cox & Stevens, 15 William Street, New York.



No. 964—78-ft. twin-screw power yacht. Speed 12-13½ miles. Large accommodation. Best construction. Cox & Stevens, 15 William Street, New York.



No. 2705—85-ft. twin-screw motor yacht. Speed up to 16 miles. Recent build. Four staterooms, large saloon, bath, etc. Cox & Stevens, 15 William Street, New York.



No. 1483—77-ft. high-speed power cruiser. Speed 18-20 miles. Double stateroom, large saloon, bath, etc. Cox & Stevens, 15 William Street, New York.

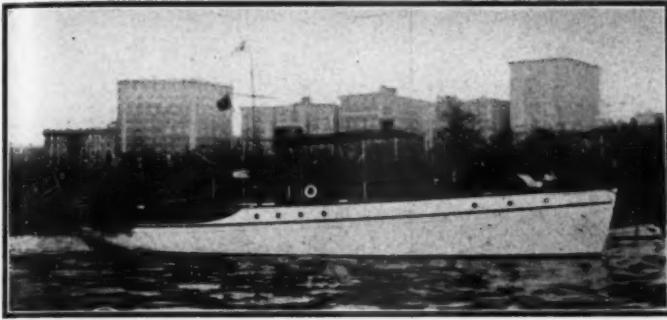
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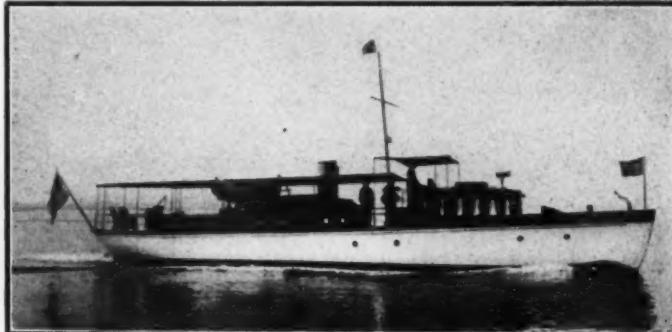
The illustrations below show merely a few typical vessels. We have many other available for sale and charter. Full particulars and plans mailed on request.

The motor boats shown on this sheet are of moderate size, large enough for real comfort for quite a large party, and yet exceedingly reasonable in first cost and in cost of running. Many can be operated with a crew of two in addition to owner and guests. Their shoal draft allows entrance to all southern harbors and rivers. We have many fine boats of this type.



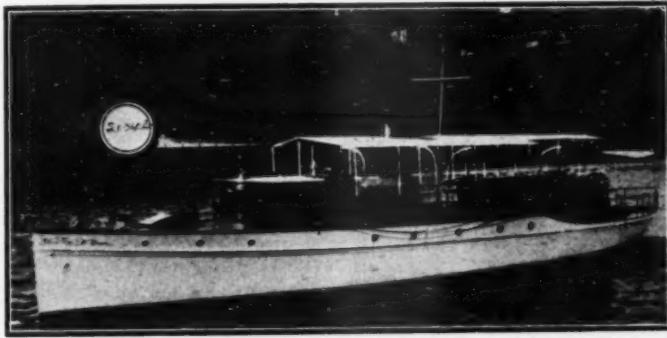
No. 1532—75-ft. twin-screw power yacht. Speed 12-14 miles. Three staterooms and bath aft; dining saloon forward. Economical to operate.

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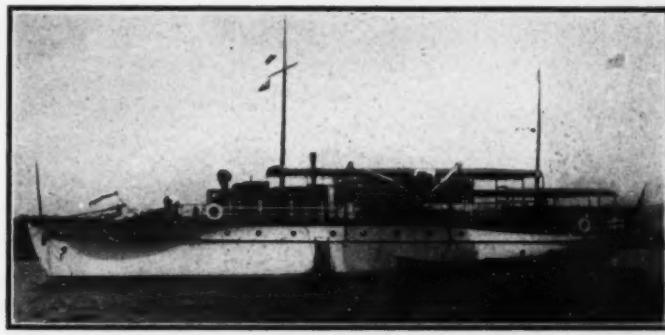
No. 1828—75-ft. gasoline yacht. Speed 11-12 miles. Large accommodations. All conveniences.

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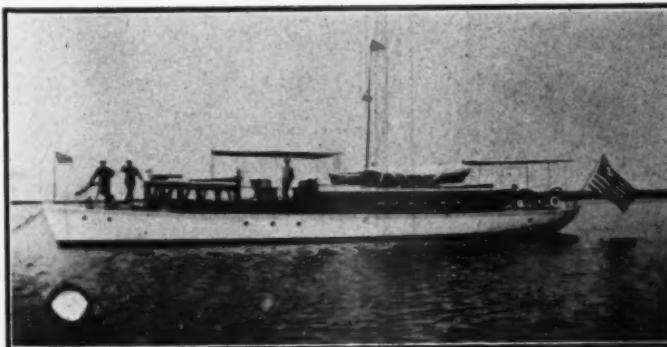
No. 2134—71-ft. twin-screw cruiser. Speed 13 miles. Double stateroom, roomy saloon and bath aft; dining cabin forward.

Cox & Stevens, 15 William Street, New York.



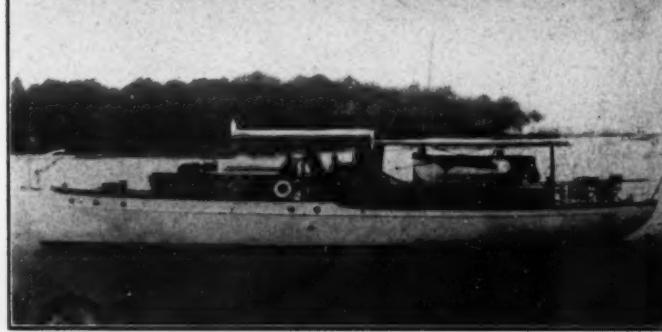
No. 1526—75-ft. twin-screw power cruiser. Speed 11½ miles. Double and single stateroom, large saloon, bath, etc. Splendid seaboat; heavy construction; deep draft.

Cox & Stevens, 15 William Street, New York.



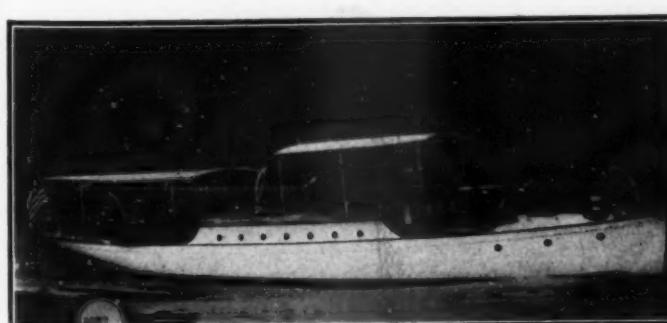
No. 429—68-ft. motor yacht. Best construction and finish. Speed 12-13 miles. Adapted for day service and moderate cruising.

Cox & Stevens, 15 William Street, New York.



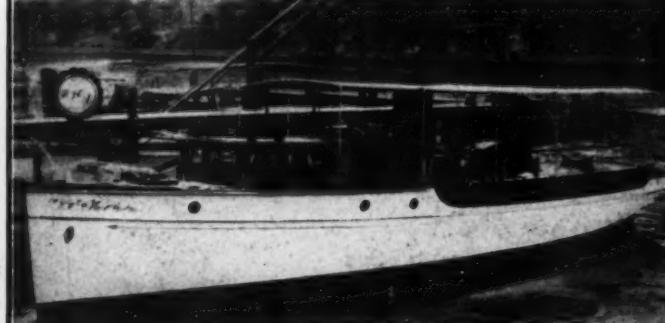
No. 1692—66-ft. power cruiser. Speed 11-12 miles. Dining saloon and galley forward; two double staterooms and bath aft. Handsomely finished.

Cox & Stevens, 15 William Street, New York.



No. 1387—65-ft. twin-screw fast gasoline cruiser. Speed up to 14 miles. Unusually large accommodation. Excellent seaboat. Our design.

Cox & Stevens, 15 William Street, New York.



No. 2757—63-ft. gasoline cruiser. Speed 10-11 miles. Exceptional accommodations include forward and after saloons, double and single stateroom, bathroom, etc.

Cox & Stevens, 15 William Street, New York.

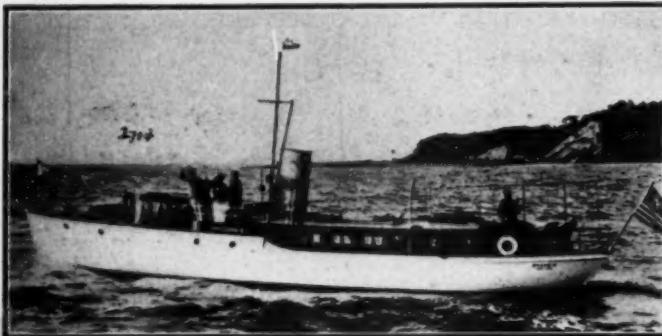
Naval Architects
and
Yacht Brokers.

COX & STEVENS

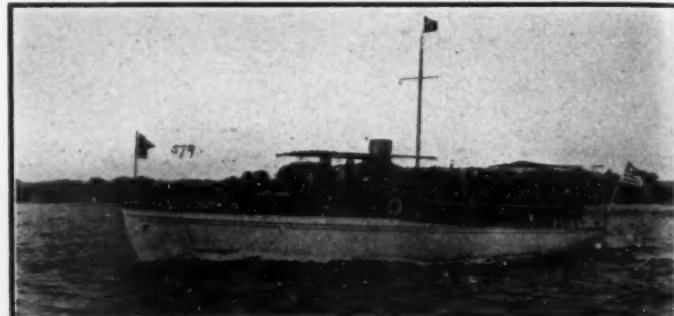
15 William St., New York.
Telephone—1375 Broad.
Cable—BROKERAGE.

The illustrations below show merely a few typical vessels. We have many other available for sale and charter. Full particulars and plans mailed on request.

The 60-foot motor boat of which we show a few good examples on this page seems an unusually popular size, and we have taken great pains to collect most complete information about all the desirable boats of this class. It is surprising how much room some of these really small boats contain.



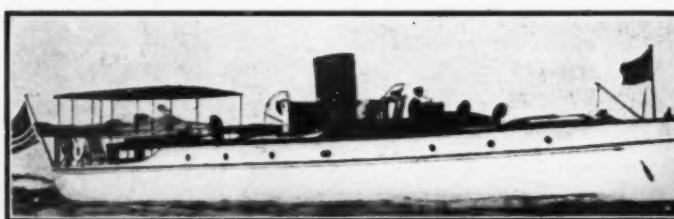
No. 2714—60-ft. gasoline cruiser. Speed 11-12 miles. Very roomy and able. Economical to operate.
Cox & Stevens, 15 William Street, New York.



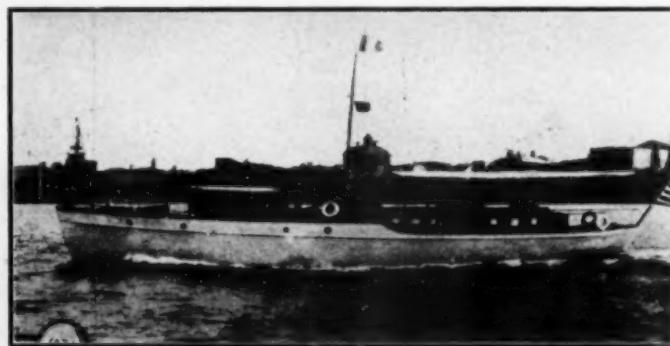
No. 579—60-ft. bridge-deck cruiser. Speed 12-13 miles. Double stateroom, saloon, etc.
Cox & Stevens, 15 William Street, New York.



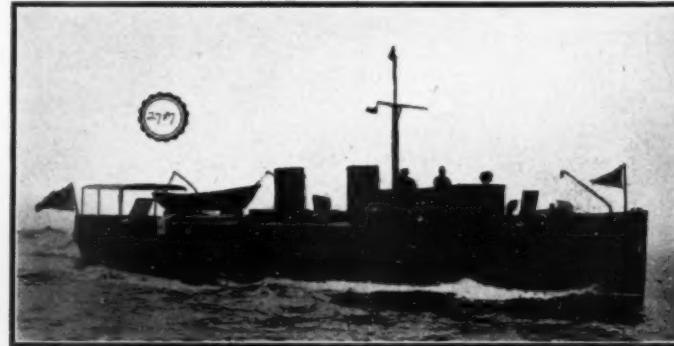
No. 521—57-ft. raised-deck cruiser. Speed 11-12 miles. Unusual accommodation; three staterooms, saloon, bath, etc.
Cox & Stevens, 15 William Street, New York.



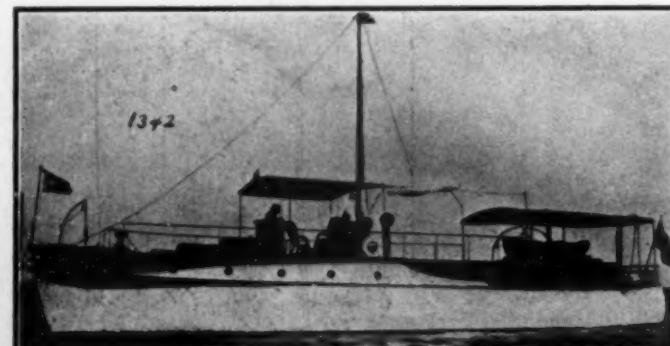
No. 2168—Fast 60-ft. cruiser. Speed up to 15 miles. Excellent accommodation; double stateroom, large saloon, toilet, separate galley, etc.
Cox & Stevens, 15 William Street, New York.



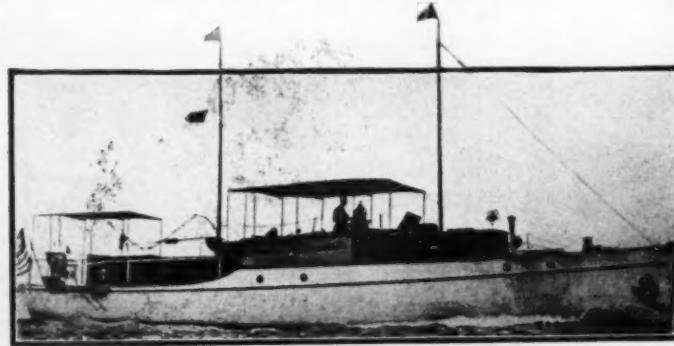
No. 1070—60-ft. power cruiser. Speed 11 miles. Dining saloon forward; main saloon, double stateroom and toilet aft.
Cox & Stevens, 15 William Street, New York.



No. 2787—68-ft. gasoline cruiser. Built 1914. Speed 13 miles. Handled with small crew. Suitable for tender to racing yacht.
Cox & Stevens, 15 William Street, New York.



No. 1342—60-ft. shoal-draft cruiser. Speed 9-10 miles. Double stateroom, very large saloon, bath, two toilets, etc.
Cox & Stevens, 15 William Street, New York.



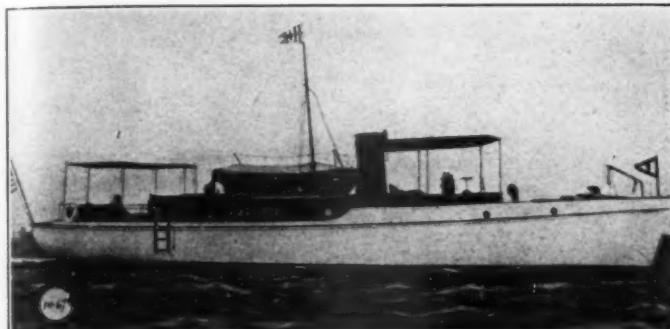
No. 2294—60-ft. bridge-deck cruiser. Speed 12-14 miles. Forward and aft saloon, double and single stateroom, etc.
Cox & Stevens, 15 William Street, New York.

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The illustrations below show merely a few typical vessels. We have many other available for sale and charter. Full particulars and plans mailed on request.

We illustrate on this page a few of the many attractive small motor cruisers. In boats of 55 feet and under the number on the market is so great that you are practically certain to find one absolutely suited to your requirements. Many of them are splendid sea-boats and have surprisingly good accommodations.



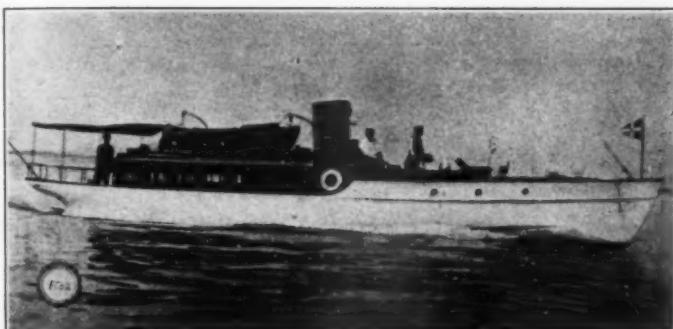
No. 1467—53-ft. bridge-deck cruiser. Speed 12 miles. Best construction; teak finish. Double stateroom, saloon and toilet aft; engine room and separate galley forward.

Cox & Stevens, 15 William Street, New York.



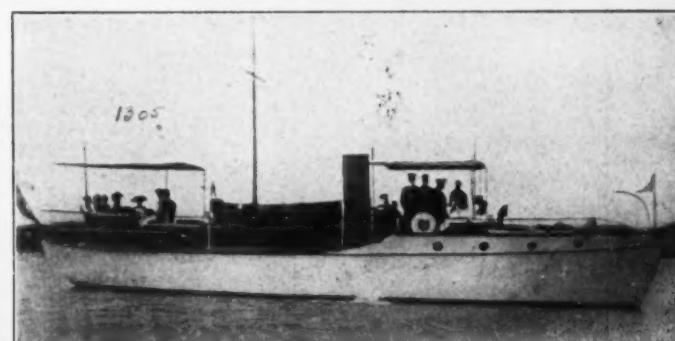
No. 2870—56-ft. high-speed cruiser; practically new. Speed up to 22 miles. Double stateroom and toilet forward; roomy saloon and toilet aft. Very attractive.

Cox & Stevens, 15 William Street, New York.



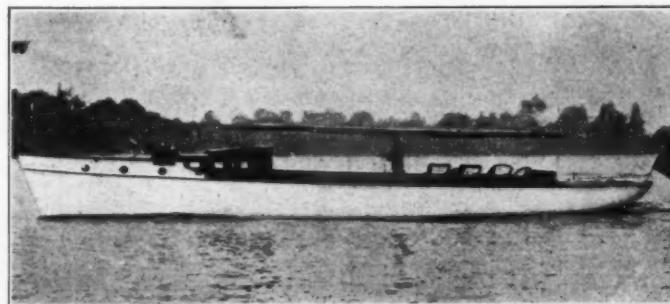
No. 1502—56-ft. fast bridge-deck cruiser. Speed 14 to 16 miles. Double stateroom, saloon, two toilets, etc.

Cox & Stevens, 15 William Street, New York.



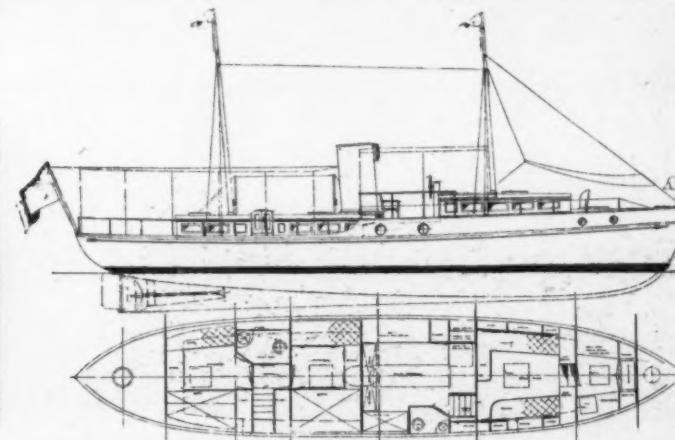
No. 1305—50-ft. bridge-deck cruiser. Speed 11-12 miles. Large saloon and double stateroom aft; separate galley and engine room forward. Handsomely finished.

Cox & Stevens, 15 William Street, New York.



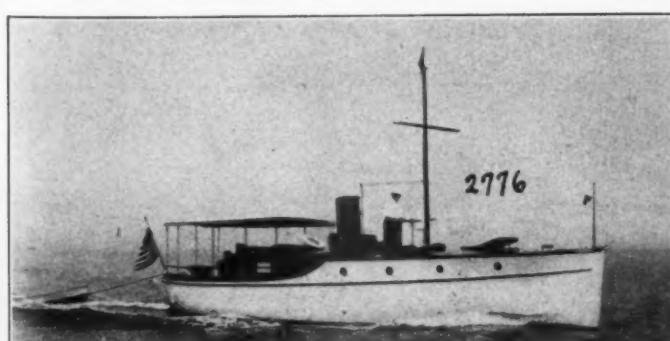
No. 1428—58-ft. day cruiser (similar to cut). Speed 13 miles. Teak finish. Cabin with two transoms, toilet, etc.

Cox & Stevens, 15 William Street, New York.



No. 2795—55 ft. bridge-deck cruiser. Speed 10½ miles. Dining saloon and galley forward; two double staterooms aft. Built 1914.

Cox & Stevens, 15 William Street, New York.



No. 2776—45-ft. bridge-deck cruiser. Speed 11 miles. Double stateroom, saloon with two berths, etc.

Cox & Stevens, 15 William Street, New York.



No. 2313—40-ft. bridge-deck cruiser. Speed 10 miles. Double stateroom forward, large saloon aft.

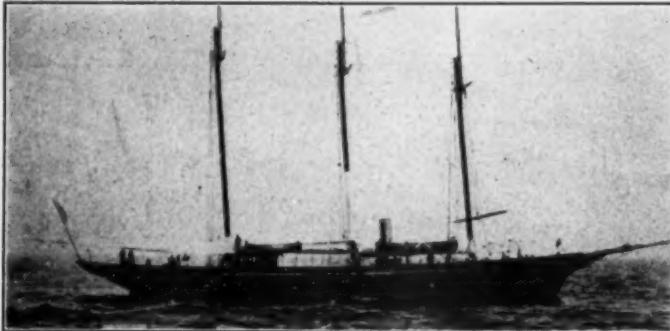
Cox & Stevens, 15 William Street, New York.

Naval Architects
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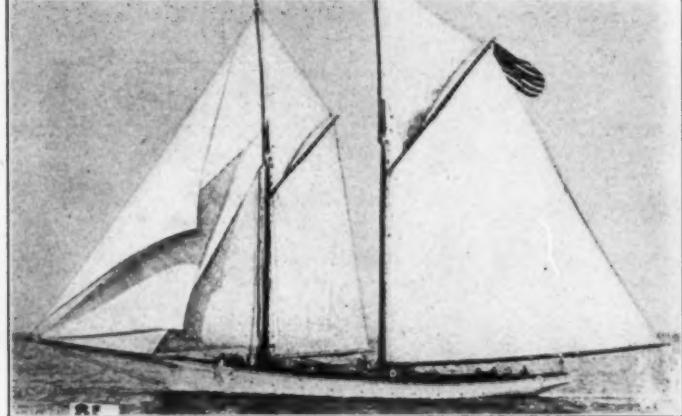
COX & STEVENS

The illustrations below show merely a few typical vessels. We have many other available for sale and charter. Full particulars and plans mailed on request.

This page shows a few auxiliaries. Of these there are many types and many of each type. Some are designed for off-shore cruising, others for Florida or coastwise work. They combine the fun of the sailing craft with the certainty of the power-driven vessel. The great beam of course gives more room on deck and below than in power-driven vessels of similar length.



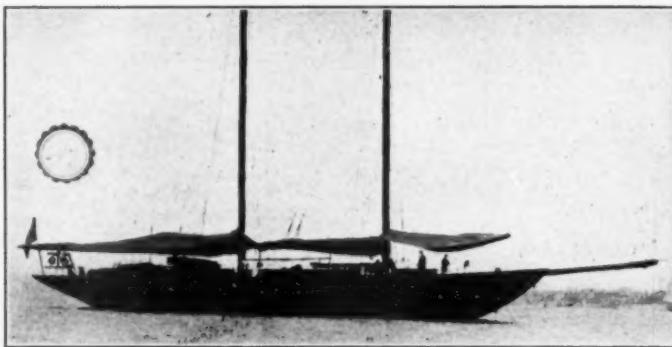
No. 24—Seagoing, 160-ft. steam auxiliary, also suitable coastwise cruising. Large saloon, five staterooms, two baths. Excellent seagoat; very able, economical. Cox & Stevens, 15 William Street, New York.



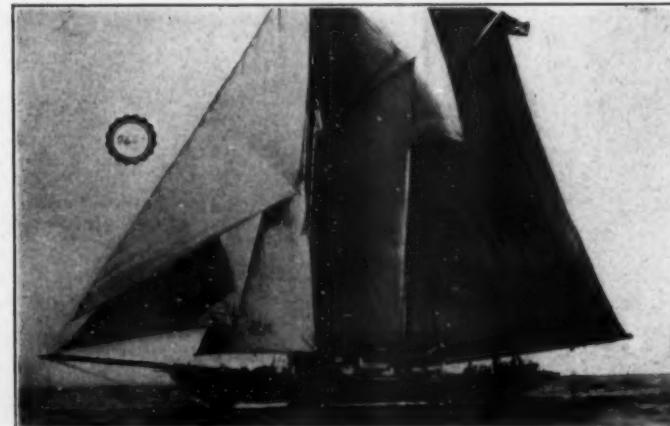
No. 8—125-ft. overall auxiliary schooner; Gloucester fisherman type. Suitable for extended cruising. Speed under power 9½ miles. Large accommodation. Cox & Stevens, 15 William Street, New York.



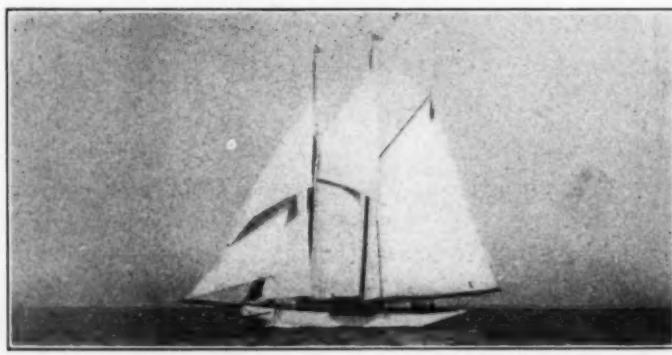
No. 1728—114 ft. overall, steel auxiliary schooner yacht. Well-known craft. Recent build. Speed under power 9 knots. Best of type available. Cox & Stevens, 15 William Street, New York.



No. 647—106-ft. overall shoal-draft auxiliary-schooner yacht; speed under power 9 knots. Excellent accommodation. Light draft. Adapted for cruise to West Indies, also Florida. Cox & Stevens, 15 William Street, New York.



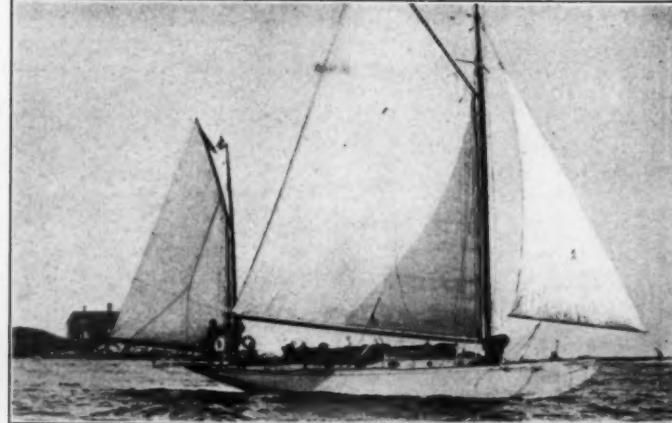
No. 2660—98-ft. overall, keel, flush-deck auxiliary-schooner yacht. Very able craft. Best construction. Speed under power 8 miles. Cox & Stevens, 15 William Street, New York.



No. 1830—70-ft. overall flush-deck auxiliary-schooner yacht. Excellent condition. Motor installed Spring, 1914. Owner has purchased larger. Cox & Stevens, 15 William Street, New York.



No. 2386—66-ft. overall auxiliary yawl; moderate draft. Very roomy, able cruiser. Speed under power 7 miles. Cox & Stevens, 15 William Street, New York.



No. 697—46-ft. overall auxiliary yawl. Double stateroom, saloon, etc. Speed under power 6½ knots. Excellent seagoat. Cox & Stevens, 15 William Street, New York.

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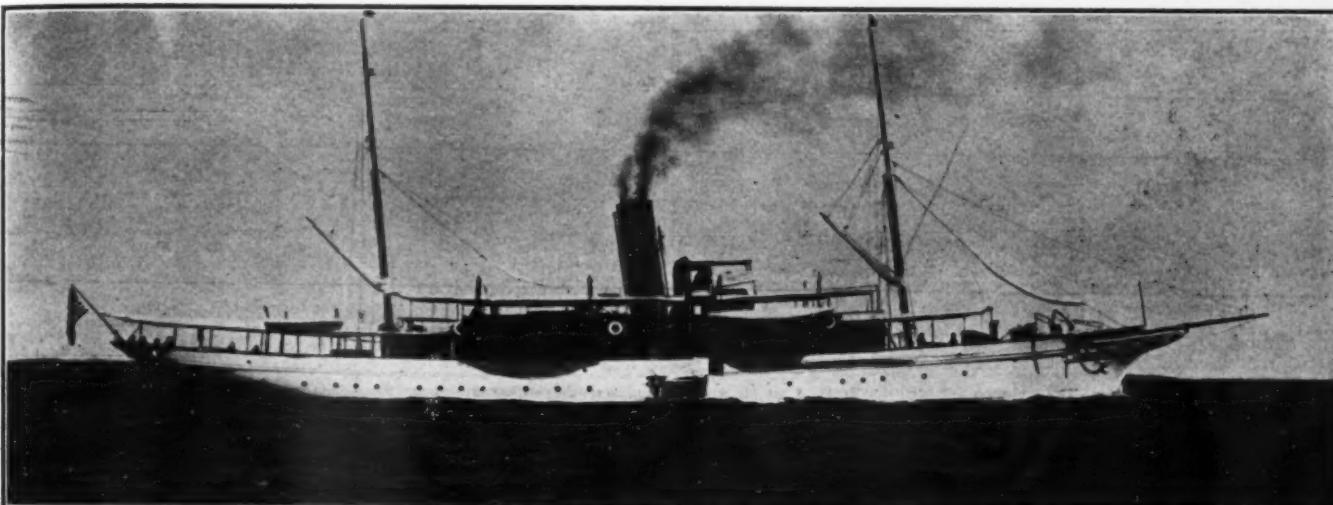
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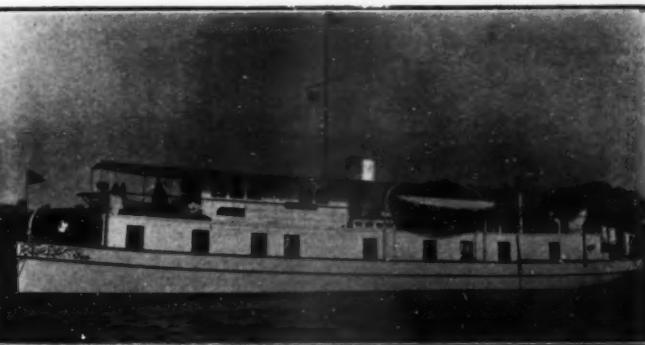
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Cable Address
Yachting, N.Y.

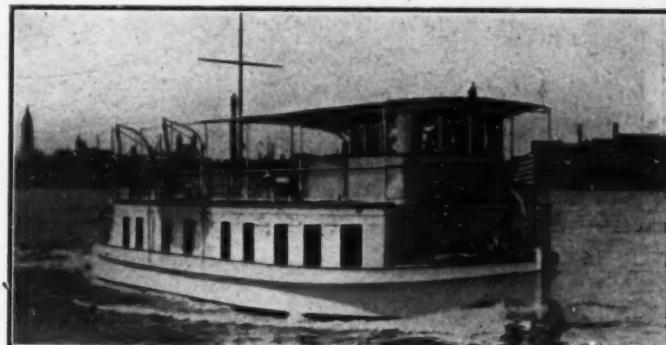
We have a complete list of Yachts of every description for sale and charter. Plans, Photos and full particulars furnished on request.



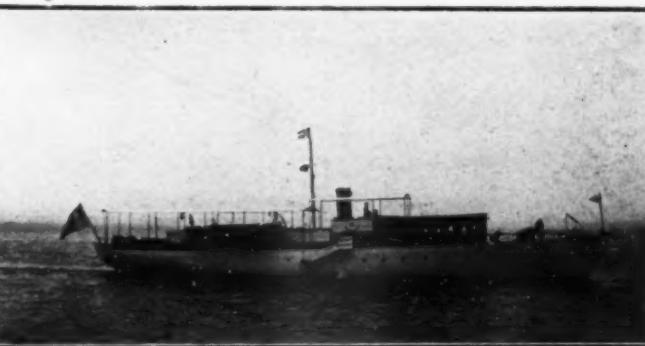
No. 618.—Sale or Charter.—Steel 200-ft. ocean going Steam Yacht. Large cruising radius. Sleeping accommodation for 12 or 14 in owner's party. Suitable for West Indies or Panama cruise.



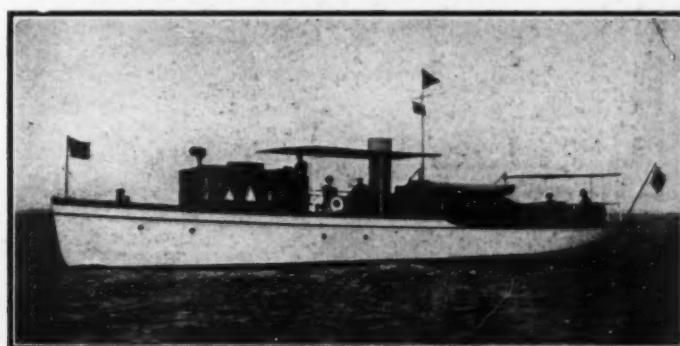
No. 160.—Sale or Charter.—Twin screw houseboat, 106 x 20.4 x 3.0, excellent owner's accommodation. Now in Florida waters.



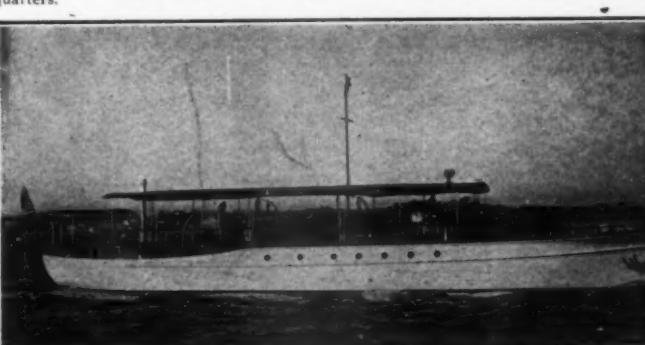
No. 32.—Power Houseboat, two motors, light draught, tunnel stern 70 x 18.6 attractive interior arrangement. Delivery Jacksonville.



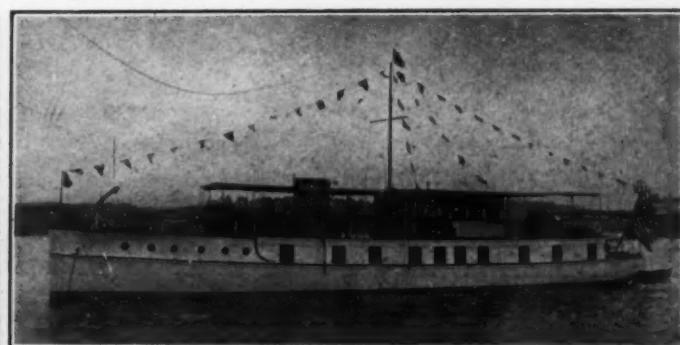
No. 1840.—Handsome Gasolene Yacht, 107 x 18.3, built 1912, two 6 cylinder Standard motors. Large dining room, exceptional deck space and commodious owner's quarters.



No. 1512.—Twin Screw Elco Cruiser, 78 x 14 x 3.6, bath, 3 staterooms, Standard motors, A-1 condition.



No. 2070.—Attractive cruiser for Southern use. 74 x 16.6 x 3.6, two Twentieth Century motors. In perfect condition.



No. 1872.—For Charter.—90 ft. Houseboat, twin screw, speed 12 miles, 4 staterooms, saloons, etc. Florida delivery.

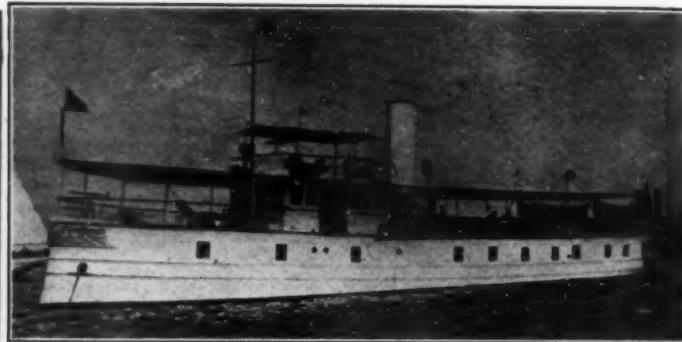
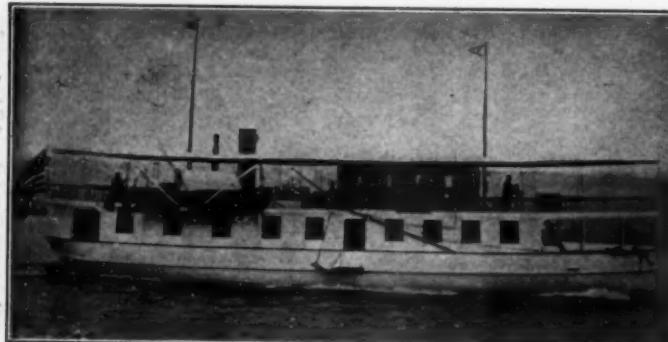
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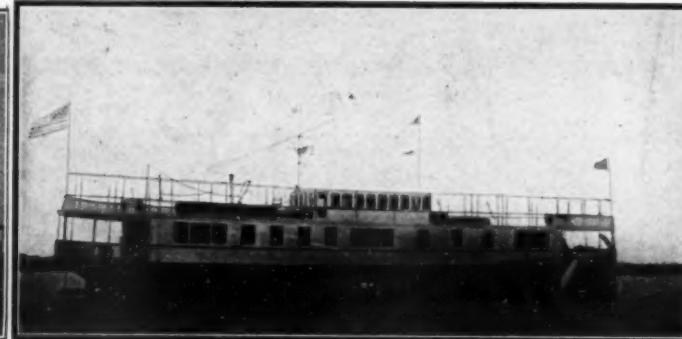
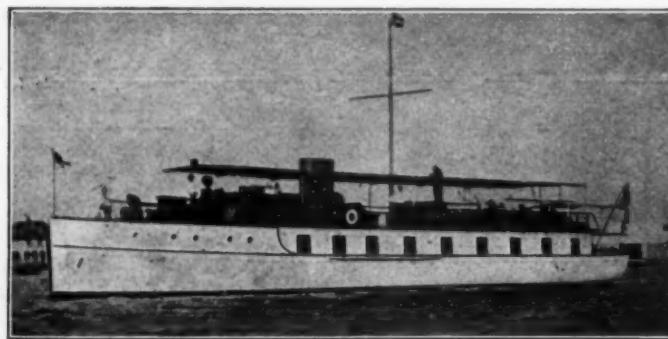
52 Pine Street
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"Offer for charter or sale the following yachts; all are ideally suited for use in Florida. We have specialized in Southern and Florida charters, having most complete lists of suitable boats available."



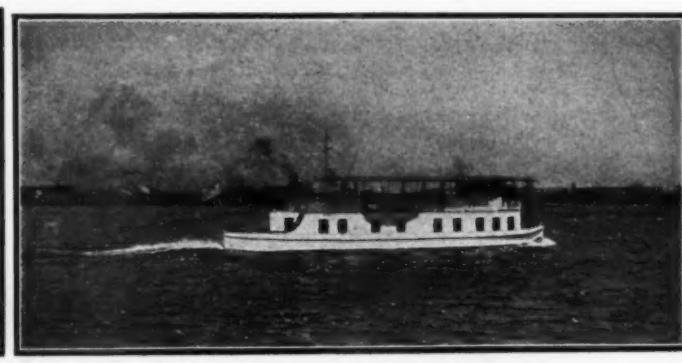
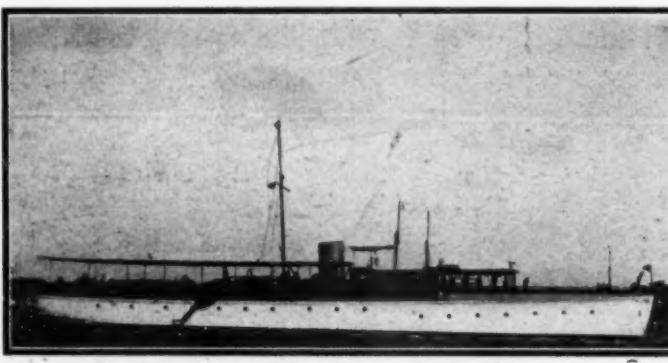
No. 1837.—Sale—Charter.—Up-to-date twin-screw houseboat, 87 ft. x 23 ft. x 4 ft. draft; 3 staterooms, dining saloon, deck saloon, 3 baths.

No. 243.—Sale—Charter.—Steam houseboat, 116 ft. x 21 ft. x 4 ft. draft; 4 staterooms, 4 bathrooms, dining and music rooms.



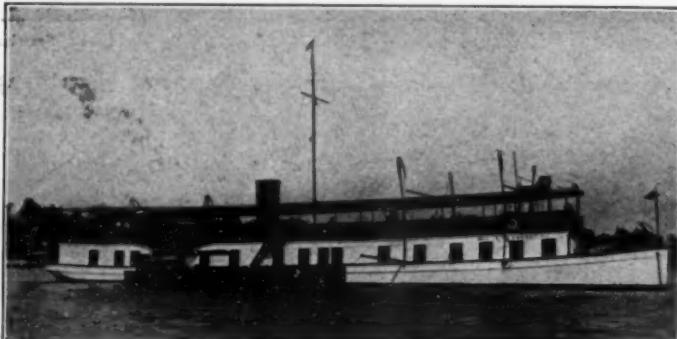
No. 1865.—Sale—Modern twin-screw houseboat, 90 ft. x 17 ft. 6 in. x 3 ft. 3 in.; 4 staterooms, dining saloon, large deck house, 2 bathrooms.

No. 1805.—Sale—Now in Florida waters; 125 ft. x 23 ft. 4 in. x 3 ft. 6 in. draft; 8 large staterooms, 3 bathrooms, dining saloon, observatory and main saloon. In excellent condition.



No. 1869.—Sale—Charter.—118 ft. fast twin-screw gasoline cruiser; 3 double staterooms, main saloon, 2 bathrooms; dining saloon on deck.

No. 1860.—For Charter.—70 ft. x 18 ft. 6 in. x 18 in. draft; 3 staterooms, 2 bathrooms, dining saloon and deck house.



No. 1808.—For Charter—Desirable twin-screw houseboat, 123 ft. x 17 ft. 8 in. x 3 ft. 4 in. draft; 4 staterooms, 3 bathrooms, large saloon, electric light plant, ice machine, etc.

No. 1847.—For Charter, in Florida waters—85 ft. houseboat; Standard motor; 3 staterooms, bathroom, saloon. Speed 12 miles.

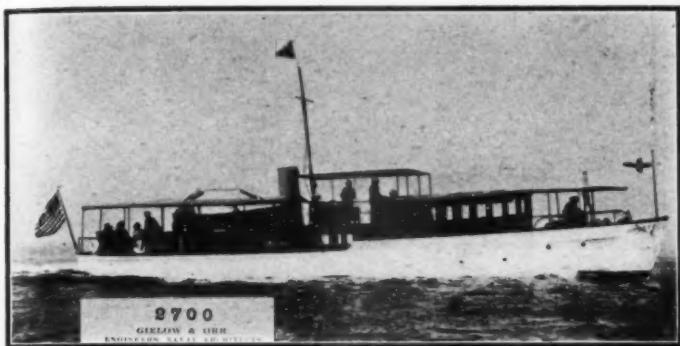
NAVAL ARCHITECTS
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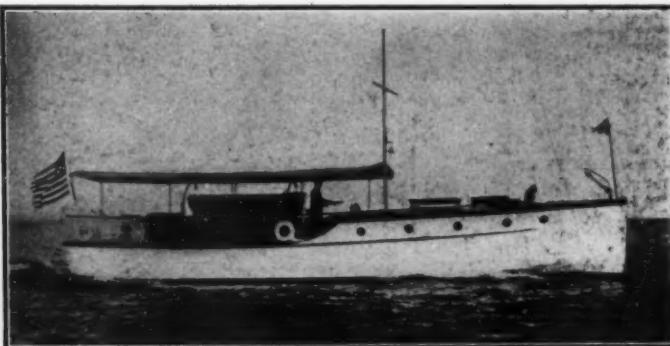
52 Broadway, New York

Telephone: 4673 Broad
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Crogie, New York
A. B. C. Code

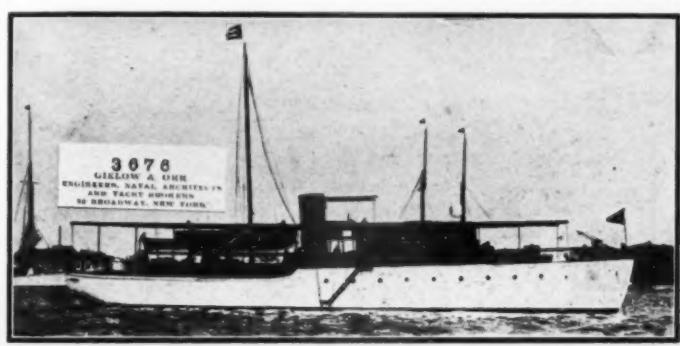
The following attractive boats are offered for sale and charter. Large number of others to select from are listed with us for sale. Yachting in Florida next Winter promises to be very active. To secure the choice yachts early decision is advisable.



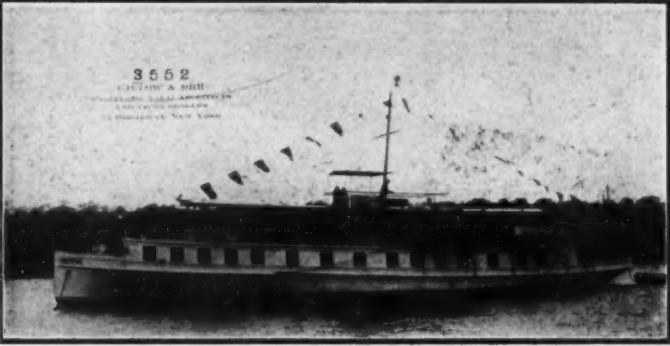
No. 2700.—Charter for Winter Cruise.—Twin-screw power yacht, 80 x 12.6 x 3.6 feet. Excellent accommodations. Bath and toilet room. Speed 12 knots.



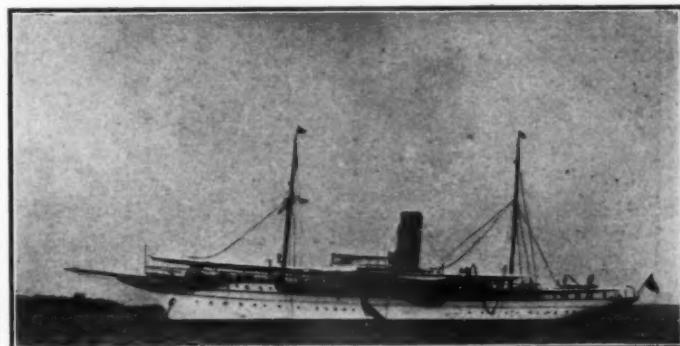
No. 4808.—For Sale.—1914 midship deck cruiser, 50 x 11 x 3-foot draft. Ideal for Florida service. Must be seen to be appreciated.



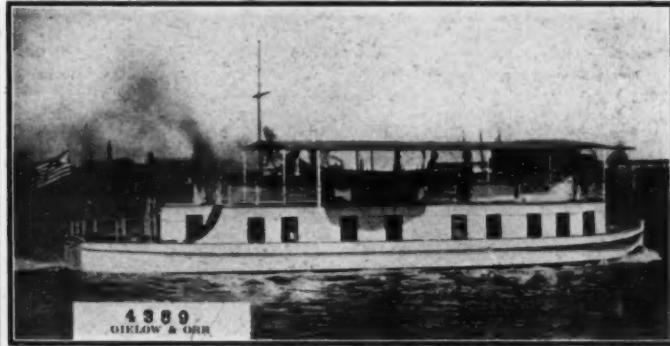
No. 3676.—Sale or Charter.—Twin-screw motor yacht, 90 x 17 x 4 feet draft. Three double and one single stateroom. Two new 6-cylinder motors last season. Good sea boat.



No. 3552.—Sale or Charter.—110-foot twin-screw power houseboat. Excellent accommodations. Good sea boat. Speed 10 knots. Economical to operate.



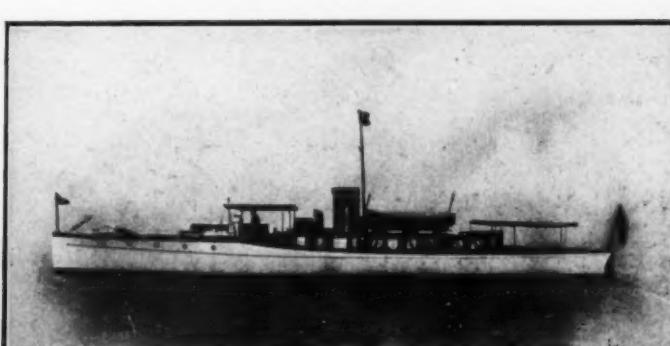
No. 3293.—Sale or Charter.—240-foot twin-screw steam yacht. Speed up to 15 knots. Triple expansion engines. Scotch boilers. Has Lloyd's highest rating. This boat has made several trips to the Mediterranean.



No. 4389.—Sale or Charter.—Now located in Florida. Twin-screw houseboat, 70 x 18.6 x 2 feet. Ideal for shoal water cruising.



No. 3664.—For Sale.—Seagoing twin-screw power yacht, 105 x 16 x 5 feet draft. Speed up to 19 miles. Two 6-cylinder Standard motors. Fine accommodations. Well found.



No. 4265.—For Sale.—High class 77-foot twin-screw cruiser. Two new 6-cylinder, 100 h.p. motors, 1914. Excellent sea boat. Good accommodations. 20 miles. Attractive price.

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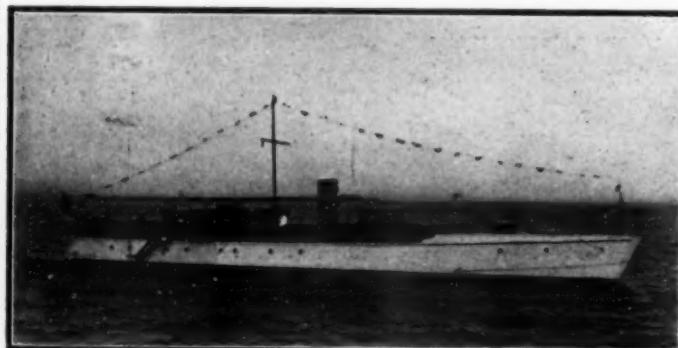
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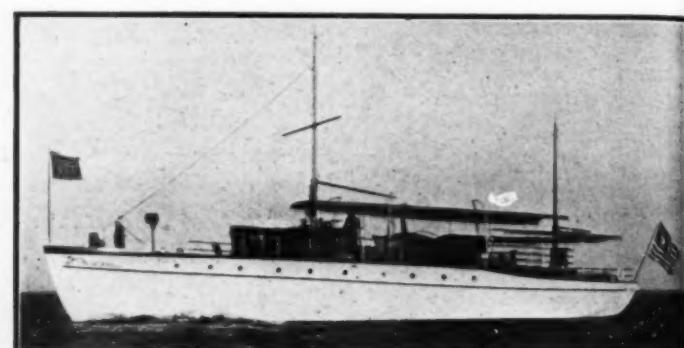
High-Class Yachts of all types for sale and charter

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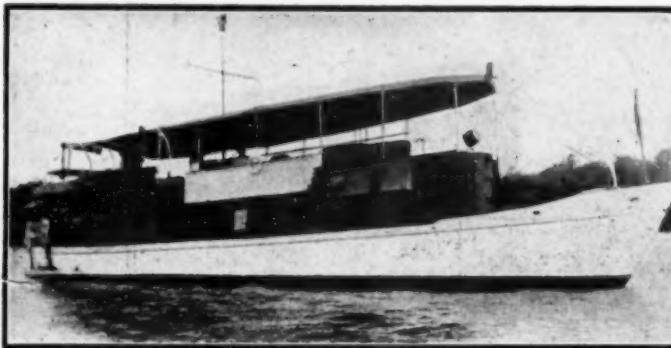
MARINE INSURANCE



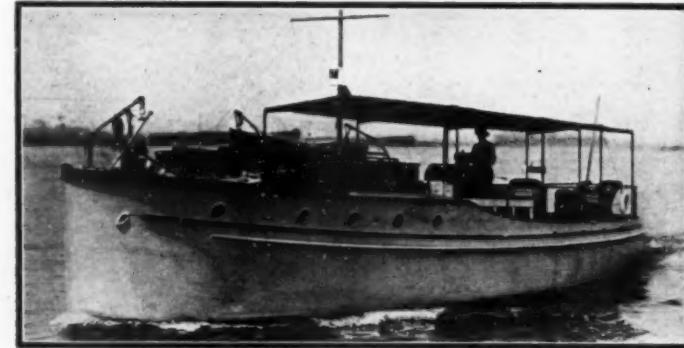
No. 3945.—93 ft. steel twin screw gasoline express yacht; probably fastest and best boat of the type. Frank Bowne Jones, Agent, 29 Broadway, N. Y.



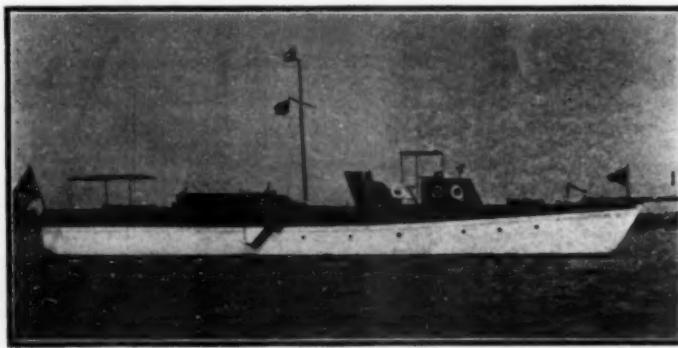
No. 5990.—75 ft. twin screw gasoline yacht; splendid accommodations; good as new. Frank Bowne Jones, Agent, 29 Broadway, N. Y.



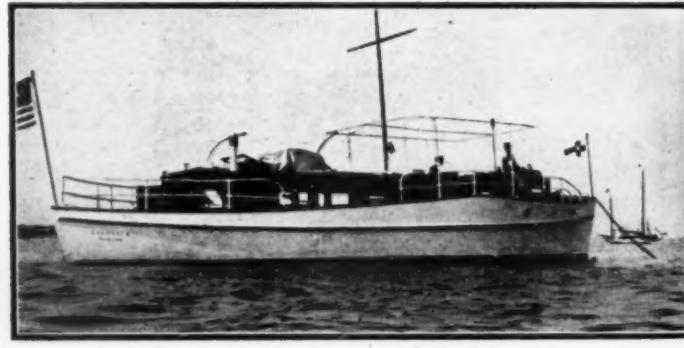
No. 6030.—70 ft. gasoline yacht; houseboat accommodations; clear upper deck; new 6 cylinder Winton engine. Frank Bowne Jones, Agent, 29 Broadway, N. Y.



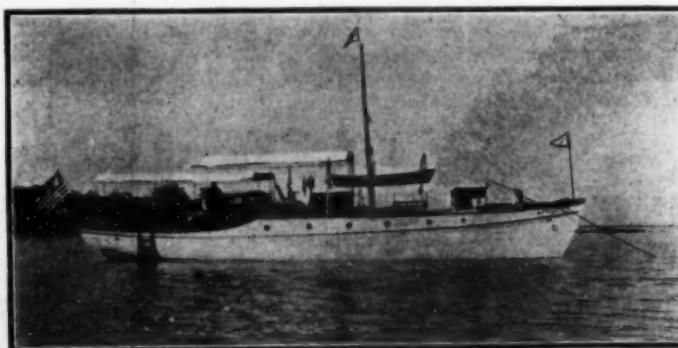
No. 6492.—50 ft. twin screw gasoline cruiser; new Standard engines; for sale or charter for southern waters. Frank Bowne Jones, Agent, 29 Broadway, N. Y.



No. 3883.—70 ft. gasoline cruiser; 90 H.P. 6 cylinder Speedway motor; 15 miles; good sea boat. Frank Bowne Jones, Agent, 29 Broadway, N. Y.



No. 6288.—50 ft. gasoline cruiser; strongly built, comfortable boat at a very low price. Frank Bowne Jones, Agent, 29 Broadway, N. Y.



No. 6651.—55 ft. raised deck cruiser; Standard motor; inspectable at New York. Frank Bowne Jones, Agent, 29 Broadway, N. Y.



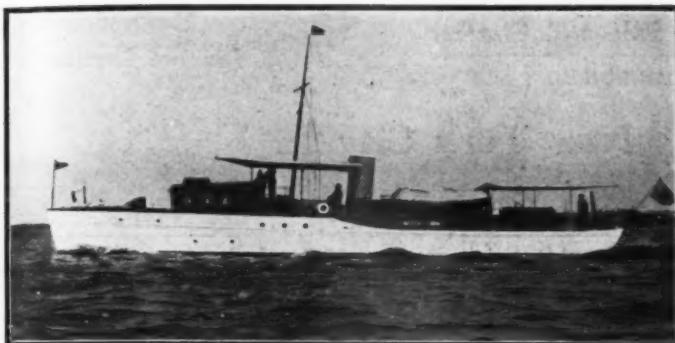
No. 3567.—50 ft. houseboat cruiser; 40 H.P. motor; suitable for Florida; now in southern waters. Frank Bowne Jones, Agent, 29 Broadway, N. Y.

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470 Bayonne

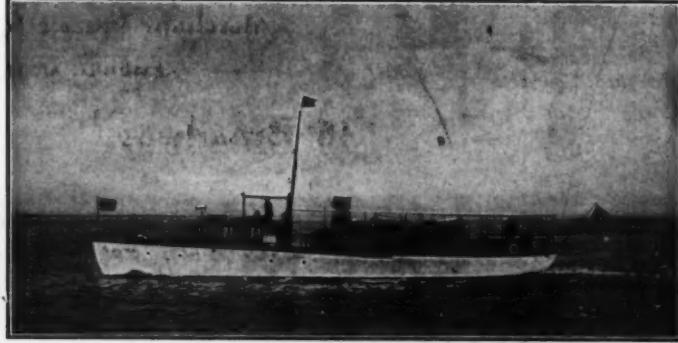
Elco

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These boats can all be seen at our works, and the purchase made directly from us



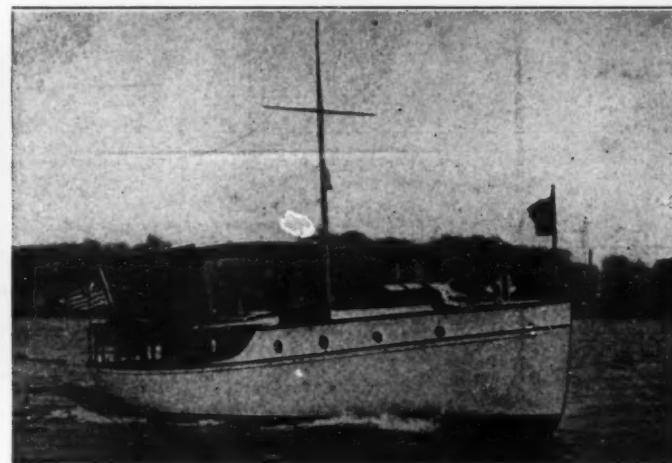
No. 1.—34-ft. ELCO MOTOR YACHT. Deck dining saloon; staterooms and bath; 150 h.p. Heavy Oil Diesel Engine. Speed 14 miles.



No. 2.—For Charter. 75-ft. ELCO MOTOR YACHT. 3 staterooms; bath; deck dining saloon. In commission; fully equipped.



No. 3.—45-ft. ELCO CRUISER. Sleeps eight persons; private stateroom; speed 11 miles.



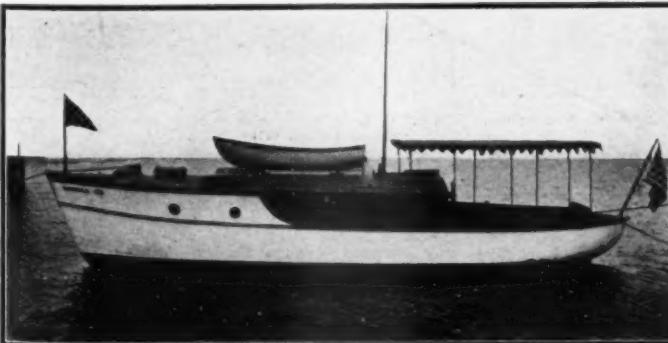
No. 4.—38-ft. ELCO CRUISER. Flush deck. Standard engine.



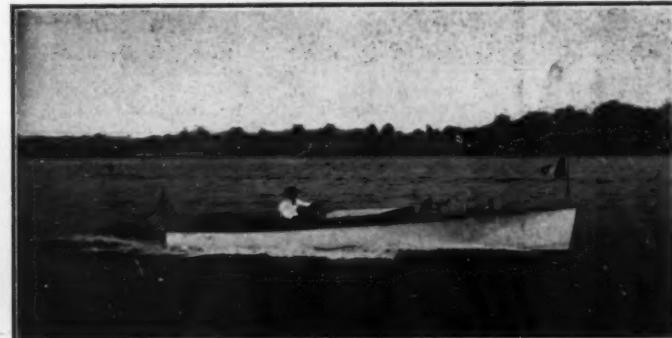
No. 5.—35-ft. ELCO EXPRESS. Six-cylinder ELCO engine. Speed 24 miles. Thoroughly overhauled.



No. 6.—30-ft. ELCO EXPRESS. Extra beam; 4 cylinder engine; speed 20 miles.



No. 7.—36-ft. RAISED DECK CRUISER. 24 h.p. 4 cylinder 2 cycle engine with electric plant. Good condition. Cheap. Please mention MOTOR BOATING.



No. 8.—26-ft. ELCO "V"-BOTTOM EXPRESS. 40 h.p. 4-cylinder engine; speed 22 miles.

HENRY H. JENNINGS

HERMAN JAGLE

Jennings Yacht Brokerage Company

AMERICAN AND FOREIGN YACHTS

Merchant Vessels for Sale and Charter

HAMBURG-AMERICAN BUILDING

Telephone
Rector 8545

Cable Address,
Yachtbroco, New York

Surveying
Marine Insurance

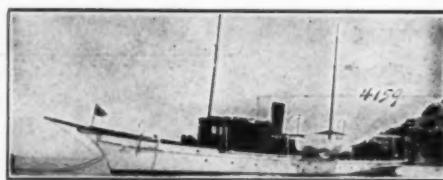
45 Broadway

New York City

Our list comprises all the available yachts for sale and charter. Below are a few of our offerings. If none of these appeal to you, write us your requirements. Our knowledge of the yachts we offer, and our 22 years' experience in the business, insure satisfaction to anyone buying or chartering a yacht through this office.



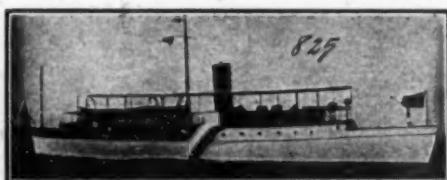
No. 3155.—200-ft. Ocean cruiser. Fit to go anywhere. Roomiest yacht afloat.



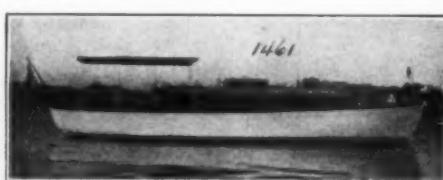
No. 4159.—100-foot steam; oil fuel. Two staterooms, saloon, etc. Speed 13 knots. Located in California.



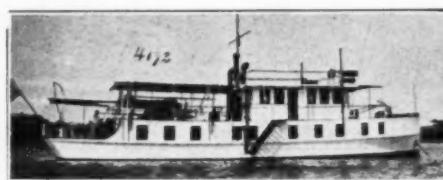
No. 4150.—90-foot Steamer. Suitable for pleasure or commercial purposes. Speed 12 miles.



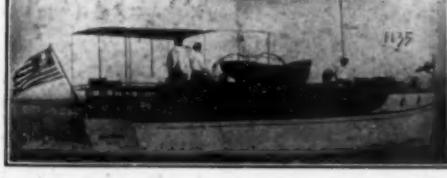
No. 825.—92-foot gasoline yacht. Two large staterooms, saloon, bathroom, etc. 30th Century motor. Price low.



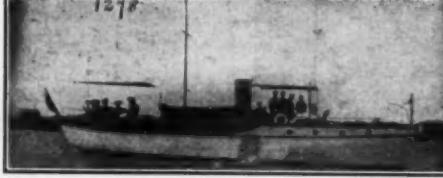
No. 1461.—40-foot cruiser; sleeps four people. Standard Motor. Speed 10-11 miles.



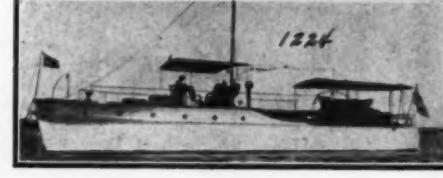
No. 4132.—Twin-screw houseboat, 77 ft. long, 2 1/4 ft. draught. Suitable for Florida waters. Four large staterooms, large dining saloon; bathroom, etc. Two 60 H. P. 30th Century motors. Speed 12 miles.



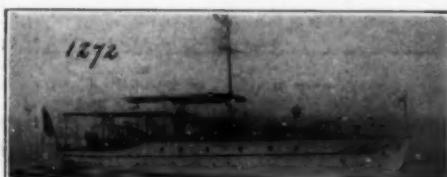
No. 1135.—43-foot cruiser, stateroom and saloon, toilet room, etc. Standard motor.



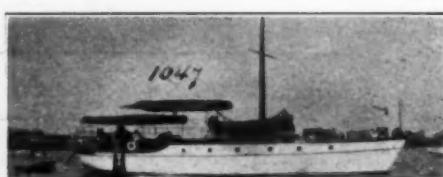
No. 1278.—50-foot cruiser. Two staterooms, saloon, two toilet rooms, etc. Standard motor.



No. 1224.—Sale or Charter.—60-foot cruiser, suitable for Florida. Stateroom, large saloon and bathroom, etc. Price reasonable.



No. 1272.—60-foot cruiser. Two staterooms, saloon, etc. Standard motor. Speed 11 miles. Price reasonable.



No. 1047.—55-foot cruiser. Two staterooms, saloon, etc. Standard motor. Price reasonable.



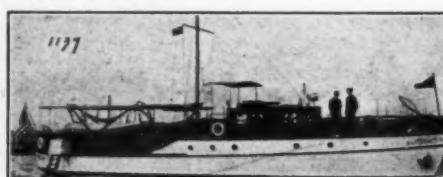
No. 1238.—75-foot twin-screw cruiser. Three staterooms, dining saloon, bathroom, etc.



No. 943.—95-foot twin-screw cruiser. Three staterooms, saloon, bath, etc.



No. 1121.—50-foot cruiser. Two saloons, stateroom, bathroom, etc.



No. 1137.—60-foot twin-screw cruiser. Three staterooms, two toilet rooms, saloon and dining saloon.

RELIANCE MOTOR BOAT CO.

207th STREET AND HARLEM RIVER

Telephone 7510 Audubon

NEW YORK CITY

Builders of the Famous Peter Pans and Cinderellas
Fastest Runabouts Afloat

*We Offer The Following At a Sacrifice
For Quick Sale*



No. 90.—Peter Pan, Sr., day cruiser, 40 x 9; magnificent mahogany; new 6 cyl. 60 h.p. motor, self-starter. Every appointment. Splendid sea boat. Equal brand new. BIG BARGAIN.

Please mention MOTOR BOATING.

No. 96.—Cinderella type, 26 ft. long, 5 ft. beam; 30 h.p. Continental motor; exquisite finish. Speed 25 miles. Brand new. Bargain.

Please mention MOTOR BOATING.



No. 99.—22-ft. x 4 ft. 2 in. highspeed runabout, V bottom; Leighton 4-cyl., 50 h.p. 1914 motor. Bosch ignition; fine condition. Speed 27 miles. \$550.00 Bargain.

Please mention MOTOR BOATING.



No. 95.—25 x 5; 3-cyl. 15 h.p. Fairbanks motor. Fine running order. Bargain, \$400.00. Thoroughly refinished.

Please mention MOTOR BOATING.



No. 100.—FAMOUS 20-ft. HYDROPLANE, Peter Pan VI. Speed 53 miles. 8-cyl. 1915 Van Blerck motor just installed. Will sacrifice for quick sale.

Please mention MOTOR BOATING.



No. 101.—Hull Peter Pan V, without motor; 20 ft.; exceptional fast. Double planked bottom. Good as new. Bargain.

Please mention MOTOR BOATING.

HOLLIS BURGESS YACHT AGENCY

15 EXCHANGE STREET, BOSTON, MASS.

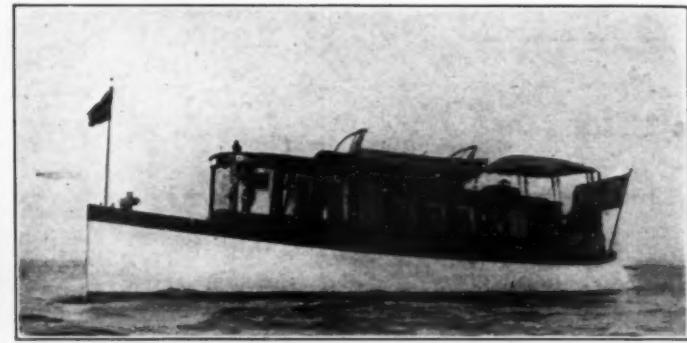
TELEPHONE, 23 MAIN

All types of yachts and vessels for sale and charter. Anyone wishing to buy, sell, charter, exchange, insure, or have appraised, designed and built, any style of craft, is cordially invited to consult us.

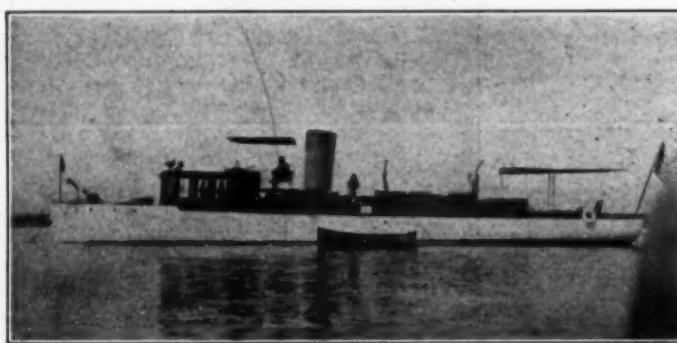
Below are a few offerings from our comprehensive list.



For Sale—39-foot motor boat, 9 feet beam. Built 1907. 20-24 h.p. four-cylinder Murray & Tregurtha motor. 10-foot cockpit. Roomy cabin with one stateroom. Complete equipment. Price \$1500. Can be seen in Boston by applying to Hollis Burgess Yacht Agency, 15 Exchange Street, Boston, Mass.



For Sale—49-foot Murray & Tregurtha built launch, 9 feet 6 inches beam, 3 feet draft. 24 h.p. Murray & Tregurtha motor. Speed 10 miles. A genuine bargain, as she can be purchased for a sixth of her cost. Can be seen in Boston by applying to Hollis Burgess Yacht Agency, 15 Exchange Street, Boston, Mass.



For Sale—Exceptional Bargain. 71-foot steam launch. Built by Lawley. Triple expansion engines. Roberts water tube boiler. Speed 14 miles. The finest boat of her type in Boston waters. Apply to Hollis Burgess Yacht Agency, 15 Exchange Street, Boston, Mass.



For Sale—36-foot motor boat, 7 feet 3 inches beam, 2 feet 7 inches draft. 20 h.p. four-cylinder Ralaco motor. Speed 10 miles. Very handsome, graceful boat. Now at Sebago, Maine. Apply to Hollis Burgess Yacht Agency, 15 Exchange Street, Boston, Mass.



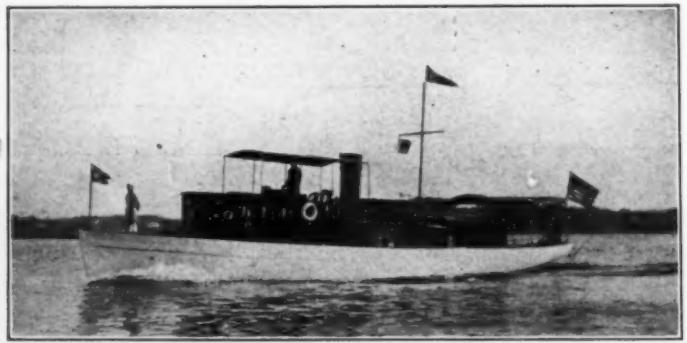
For Sale—45-foot power cruiser. 16 h.p. Standard motor. Lawley design. Just the boat for southern cruising as her draft is only 3 feet. Mahogany finish. Complete equipment. Can be seen in Taunton, Mass., by applying to Hollis Burgess Yacht Agency, 15 Exchange Street, Boston, Mass.



For Sale—Very able, strongly built and seaworthy open motor boat, 28 feet 6 inches long and 7 feet beam. Built 1910. 10 h.p. Ralaco motor. Seats 14 people comfortably. Bargain. Apply to Hollis Burgess Yacht Agency, 15 Exchange Street, Boston, Mass.



For Sale—Attractive runabout, 25 feet 2 inches long, 5 feet 2 inches beam, 2 foot 11 inches draft. 20-35 h.p. four-cylinder Sterling motor. Speed 18 miles. Price \$800.00. Apply to Hollis Burgess Yacht Agency, 15 Exchange Street, Boston, Mass.



For Sale—Very attractive 60-foot steam launch. Built in 1902 by Rice Bros. at East Boothbay, Maine, from designs of Crownshield. 75 h.p. engine. Roomy cabin with one stateroom. Bargain. Can be seen in Boston by applying to Hollis Burgess Yacht Agency, 15 Exchange Street, Boston, Mass.

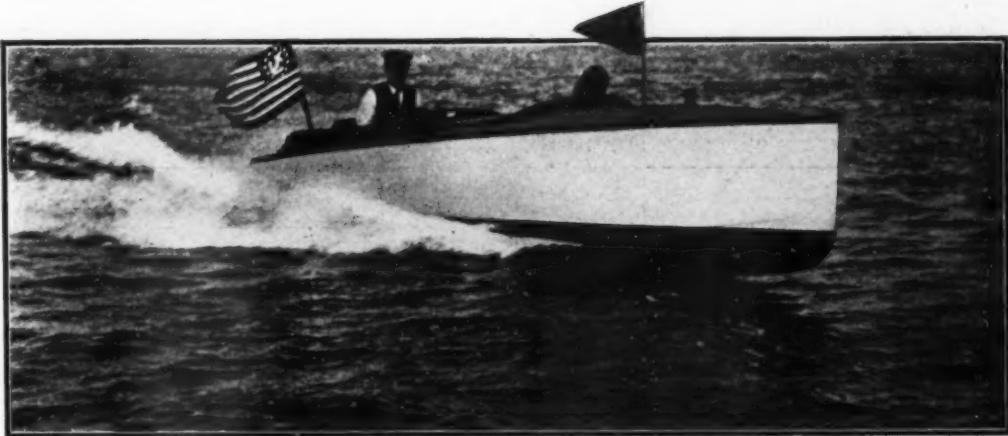
HAND-V-BOTTOM BOATS

CABLE, "HAND" NEWBEDFORD

WILLIAM H. HAND, JR.

NAVAL ARCHITECT, NEW BEDFORD, MASS., U. S. A.

I have a few high grade Hand-V-Bottom Boats for sale. These were built, engined and tested under my personal supervision and are fully guaranteed, in every respect, the equal of new.



"SKILLAGALLEE"—A fast V-Bottom runabout with exceptional abilities, splendidly built and finely finished with mahogany trimmings and polished bronze hardware. Motor, Loew-Victor Model 30, 20 h.p., installed with full automobile control, including electric self-starting and lighting system. Guaranteed speed, 22 statute miles. Length, 20 ft.; beam, 4 ft. 6 in.



"PIUTE V"—A fine Hand-V-Bottom day cruiser built for designer's personal use. Similar to the famous "Flyaway III," although smaller. A fast, seaworthy boat with exceptional cockpit accommodations and a very convenient little cabin with berths for two, toilet, galley and other cruising necessities. An exceptional boat for Florida fishing. Can be throttled to less than a mile per hour, while the maximum service speed is 18. Motor is a 6-cylinder, 60 h.p. Loew-Victor with electric starting and lighting system installed with full automobile control. Attractive finish with mahogany trimmings and bronze hardware. Length, 30 ft. 8 in.; beam, 8 ft. 2 in.; draft, 2 ft. 3 in.



No. 320.—A typical Hand-V-Bottom rough water runabout of remarkable abilities. Suitable for use on any body of water. A finely finished boat, in perfect order. Cockpit arranged to seat eight or more comfortably. Motor a 4-cylinder, 40 h.p. Loew-Victor, installed under hinged hatches with full automobile control. Speed, 21 miles. Length, 25 ft.; beam, 6 ft.; draft, 23 in.

THE MOTO R

The rates for "For Sale" and "Want" advertisements is 8 cents per word. If an illustration is used the charge is as follows, which includes the making of the cut:
 Cut one inch deep, one column wide..... \$2
 Cut 1 1/4 inches deep, one column wide..... \$5
 Cut three inches deep, three columns wide..... \$15

BOATING MARKET PLACE
Opportunities for the Motor Boatman

Before you buy or before you sell examine the exceptional buying and selling opportunities under this heading. They comprise the best offers of the month. Please mention MOTO R Boating.

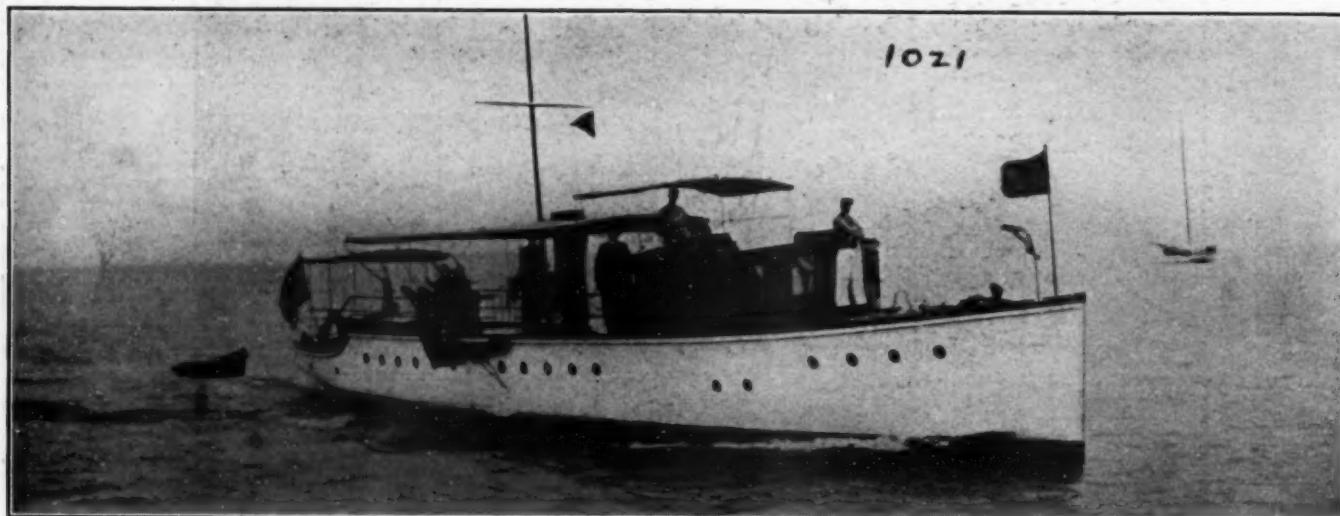
A. J. McINTOSH YACHT AGENCY
32 BROADWAY, NEW YORK CITY

Telephone Broad 4886
Best Bargains now on the Market

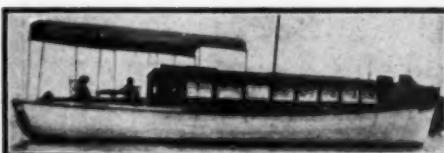
50-ft. Modern raised deck 6-cylinder Standard.....
 45-ft. Bridge Cruiser, Buffalo motor.....
 35-ft. Raised Deck Cruiser, Standard motor.....
 45-ft. Cruiser, long cockpit, Speedway.....
 49-ft. Florida Cruiser, 2 ft. draft.....
 48-ft. Modern Cruiser, Murray & Tregurtha.....
 54-ft. Elco Day Cruiser, high grade.....
 51-ft. Modern Cruiser, Automatic motor.....
 50-ft. Long Cockpit, good accommodations.....
 55-ft. Ideal Florida Cruiser.....
 68-ft. Twin Screw, Standard motors.....
 70-ft. Flush Deck, two Buffaloes.....
 75-ft. High Grade Modern, two Craigs.....
 92-ft. 20th Century Cruiser.....
 105-ft. Cruiser, two Standards.....
 110-ft. Cruiser, three Sterlings.....
 120-ft. Cruiser, two Speedways.....

\$4,500
1,800
1,500
2,500
3,000
6,200
2,000
2,500
3,500
3,500
6,000
12,000
8,500
35,000
35,000
45,000

HOUSEBOATS AND MOTOR BOATS NOW IN FLORIDA FOR SALE OR CHARTER.
YACHTS SUITABLE FOR PASSENGER AND FREIGHT BUSINESS.



No. 1021.—For Sale.—Flush deck, 83-foot cruising motor yacht. Speed up to 14 miles. Two staterooms, bathroom. Large deck house. Six-cylinder 150 h.p. motor. Excellent sea boat. Will be sold at low price or will exchange for free and clear income real estate. Gielow & Orr, 54 Broadway, New York.



FOR SALE—This big, roomy, comfortable boat, 3 years old, 38 ft. x 10 ft. beam, headroom 6 ft. 6 in. One man control; fully equipped and ready to go Florida cruising. Write for further details. Price \$1200.00. Edward Keil, 283 East 169th Street, Bronx, New York City.

WANTED TO BUY—Modern Cruiser, 75 to 125 feet. Give detailed description, price and where same can be seen; must be bargain. F. A. HILL & CO., 5638 W. Lake St., Austin, Chicago.

HIGH GRADE MARINE STEAM ENGINES. 1—Double cylinder, 5 in. x 6 in., \$200. 3—Double cylinder, 6 1/2 in. x 9 in., with balanced phosphor-bronze valves, \$650 each, two for \$1200. These engines have frames, crank shafts and all motion work highly polished. Phosphor-bronze eccentric straps. 1—Fore and aft compound, 11 in. and 19 in. by 10 in. stroke, with surface condenser, air and circulating pumps. Compact design, salt water equipment, \$1400. These engines were all built in France and are representative of the high mechanical skill attained in that country. Have been little used and are in perfect running order. Could not be duplicated for twice the above prices. Fred M. Westcott, Sta. A, R. D. No. 3, Toledo, Ohio.

CANADIANS, Second-hand engine bargains. Send for list. Guarantee Motor Company, 73 Bay Street, North, Hamilton, Ont., Canada.

FOR SALE—27 ft. cruiser, brand new, latest style. Price \$600 for quick sale. James Wilde, Pearl River, N. Y.

WANTED—Trunk Cabin Express Day Cruiser, 25 to 30 feet; must be late model. Charles T. Lamb, 91 Reid Avenue, Brooklyn, N. Y.

USE "SNAPPER" ENGINES for your small boat. They are a big little engine built by The Automatic Machine Co., Bridgeport, Conn.



I wish the best and largest cruiser, not exceeding thirteen foot beam, height fourteen feet, length eighty to one hundred feet. I wish to pay 33% cash and balance either in virgin timber or wild lands in Northern Minnesota, or give in exchange my 50, 10 x 3 Explorer. Six Pullman sections; 50-75 H. P., 4-cylinder, 4-cycle Anderson engine, 1910. Fully equipped with power dinghy. Now at Ranier, Minn. New cruiser must have at least four staterooms. Dining hall sufficiently large to accommodate twenty people. Be up to date in furnishings, hull and power. Address F. A. Dunsmoor, 100 Andrus Bldg., Minneapolis, Minn.

WANTED TO BUY—High grade Runabout, 30 to 40 feet. Give full particulars. F. A. HILL & CO., 5638 W. Lake St., Austin, Chicago.

FOR SALE—5 feed, Mechanical Force Feed Oiler. \$5.00. FRED MCKAY, Brooksburg, Ind.

BARGAINS—High Tension, 4-cylinder Komet magneto, like new, Bosch type, manufacture Port Dow Electric Co., Braintree. Cost \$65, sell \$30. Brand new double cylinder air pump, pumps 250 lbs., operated by gear. Cost \$25, sell \$12. Fine for whistle. Brand new 1914 Gies Gear, 14 H.P., \$10. Wm. H. Hickey, Jr., 194A Savin Hill Ave., Boston, Mass.

FOR SALE—25 single-cylinder, 3 H. P. Rice Engines, make and break spark. 30 single-cylinder, 4 H. P. Rice Engines, jump spark. These engines are the same model we use in our 20-foot stock motor boats. In order to clean up the whole lot promptly we are offering them for about half price. Here is a chance to get a good engine cheap. Rice Brothers Company, East Boothbay, Maine.

WILL sell your boat and do it for you quickly. Mail plan below decks, also photo, and give detailed description. Advise where located and state reasonable price. Have quick outlet for several good boats; yours is one wanted. Do it now. Commission from buyer. Want good schooners or yachts, 35 to 75 feet water-line, with or without power. (Sloops that are convertible into yawls will do.) Want several power boats same size. Export Contractor. Box C, Motor Boating, 119 West 40th St., New York City.

WANTED—High grade six-cylinder marine motor for Runabout. Give full particulars. T. B. ROBERTS, 822 N. Kenilworth Ave., Oak Park, Ill.



No. 251.—For Sale.—Fast cruising motor boat 38 x 35 x 7 x 3 ft., designed and built by Lawley, 1912, and exhibited by them in New York and Boston Motor Boat shows of that year. Double planked, copper fastened. Has forward and after cabins with toilet-room in bow, sleeps 4, engine under bridge amidships. Large cockpit, speed 17 miles an hour. Very able and strongly built 70-h.p., 6-cylinder Lamb engine, Lawley tender. Complete equipment, everything in best possible condition. Laid up near Boston. Apply John G. Alden, 131 State St., Boston.

THE MOTOR BOATING MARKET PLACE

The rate for "For Sale" and "Want" advertisements is 10 cents per word. If an illustration is used the charge is as follows, which includes the making of the cut:
 Cut one inch deep, one column wide..... \$2
 Cut 1½ inches deep, 1½ columns wide..... \$3
 Cut three inches deep, three columns wide..... \$10

Opportunities
for the
Motor Boatman

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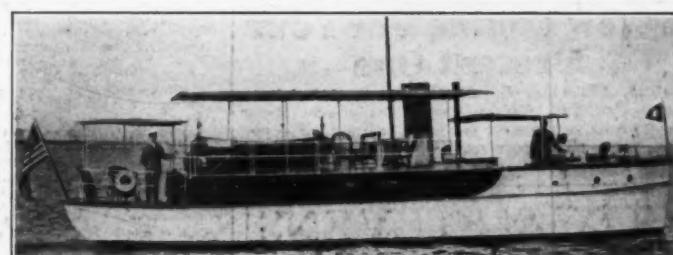
A 45 or 48 foot Cruiser with a guaranteed speed of *twenty-eight miles per hour* with 150 H. P. Sterling engine installed, at an attractive price. For further particulars write

ADOLPH APEL
VENTNOR HEIGHTS, ATLANTIC CITY NEW JERSEY

Greatest proposition ever offered!



Cabin Launch, 46 x 9 x 3½. Designed and built by Lawley 1913. Sterling Motor, 40 H.P. Cruising speed 10 knots. Complete equipment. Reasonable price for immediate sale. V. D. Bacon, Barnstable, Mass.



FOR SALE—55-ft. motor yacht. Up-to-date, complete salt water equipment; copper sheathing; unusually comfortable. Inspection any time. All details upon application. Now in commission at Tampa. Price \$5000. R. L. YOUNG, 935 So. Oregon Ave., Tampa, Florida.

WANTED STERLING SERVICE MEN and OPERATORS—We want the addresses of experienced Sterling Operators and Service Men to enable us to have a complete file, so we may be able to put Sterling Users in quick touch with competent men. Address with full particulars The Service Department, Sterling Engine Company, Buffalo, N. Y.

WANTED—25 to 30 ft., 8 to 12 H.P. second-hand Atlantic dory in good condition. Address "Atlantic, care of Motor Boating, 119 West 40th Street."

CYLINDERS REBORED—Pistons and rings fitted, new cranks, connecting rods, cases, transmissions, any part for automobile or motor boat motor reproduced like original. The shop of quality. McCadden Machine Works, Minneapolis, Minn.

Parties owning patents on established high class rotary valve motor desire to make arrangement with manufacturers to make and sell same on royalty basis. Address No. 10, Motor Boating.

ATTENTION—Elegantly appointed 60 ft. bridge deck motor yacht, new condition, 60 H.P. motor. All conveniences. Cost \$14,000. Sacrifice at \$3500. G. W. Ford Yacht Agency, 30 East 42nd St., New York.

WANTED—A neat, intelligent young colored man, 21 years, desires a position working on house boat, private yacht, launch or regular steamship. Willing to begin at anything. Willing to go abroad or remain in America. Will remain permanent if necessary. Can furnish best of references. Address, J. A. Brooks, 324 West Liberty St., Savannah, Ga.

BUY — SELL — EXCHANGE
Binoculars, Field Glasses, Telescopes, Microscopes, Kodaks, Motor Goggles, Compasses, Barometers, etc. Eye Glass Department a SPECIAL FEATURE. E. B. Isaac, 26 John Street, New York City.

BIG BARGAIN
8 Cylinder, 40 H. P., "V" type engine suitable for fast motor boat or automobile, \$395.00, complete. Inspection by appointment. Details, address, RICORDCO, care of Motor Boating.

FOR SALE—Kermath Outfit B, 4 cylinder, 4 cycle engine, 1914 model in absolutely perfect condition. Has never given one instant's trouble. Reason for selling, have ordered a new 20 h.p. Kermath. Will have engine all refinished before shipping. Price \$160.00. J. N. Morrison, 22 Prentis Avenue, Detroit, Mich.

Luxury Speed

HUTCHINSON STANDARD TYPES

Those who are in the market for high class family runabouts of 35 to 40 feet will be interested in our standard types, and in the boats of these types which we have built. Boats of this class have reached their highest present development in our most recent productions, notably "Voyageur" and "Thais." As the selection of very high class runabout boats is not large we shall take pleasure in submitting full details of our boats to every prospective purchaser,

knowing that where quality, comfort and luxury, with speed, is the criterion, a Hutchinson built boat will be selected.

Write us to-day for data and prices
HUTCHINSON BROTHERS
ALEXANDRIA BAY, N. Y.

Illustrations show views of "Thais,"
built for Mr. A. O. Miller.



NAVAL ARCHITECTS & YACHT BROKERS

YACHT

DESIGNERS - BUILDERS - ENGINEERS
ATKIN-WHEELER COMPANY
HUNTINGTON, N. Y.

ARTHUR BINNEY

Successor to EDWARD BURGESS

NAVAL ARCHITECT AND YACHT BROKER
MASON BUILDING, 70 KILBY ST., BOSTON, MASS.
Agent for The Standard Marine Motor, The Commercial
Acetylene Co. (Safety Storage System.)

TELEPHONES
Office, 2702, Main. Residence, 3023-8, Brookline.
YACHT BROKERAGE DEPARTMENT
Charters, 10 per cent.

BOWES & MOWER

NAVAL ARCHITECTS AND ENGINEERS
YACHT AND VESSEL BROKERS

Offices, Lafayette Bldg., Chestnut and Fifth Streets
Bell Phone PHILADELPHIA, PA. Cable Bome

A New Engine For Your Present One

BRUNS, KIMBALL & COMPANY, Inc., 115 Liberty
Street, New York City, will make you a most liberal
allowance on your present engine in exchange for a new
one. Let us know your requirements.

HIGH GRADE YACHTS FOR SALE AND CHARTER

COX & STEVENS
Engineers and Naval Architects
Yacht Brokers
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TELEPHONE 1375 BROAD

JAMES CRAIG
627-841 Garfield Ave. Jersey City, N. J.
Tel. 2237 Bergen

DESIGNER AND CONSTRUCTOR OF
MARINE GASOLINE ENGINES AND
SPECIAL MECHANISMS, SEVEN TO
THREE HUNDRED HORSEPOWER

JOE FELLOWS
Yacht & Launch Co., Inc.
ARCHITECTS AND ENGINEERS
5 Railways 60 to 300 Ton
Sterling Wolverine Eagle
Campbell Waterman
WILMINGTON
Salooners: 322 E. 7th St. Main Yard and Office

William H. Hand, Jr.
NAVAL ARCHITECT
NEW BEDFORD, MASS.
HAND-V-BOTTOM DESIGNS
Write for 48-page illustrated catalog

"BOATS OF QUALITY"
All Types. Power Boats up to
50 feet
MILTON BOAT WORKS, Rye, N. Y.
Designers and Builders

FREDERICK S. NOCK
Naval Architect and Yacht Builder
Marine Railways, Storage, Repairs
EAST GREENWICH RHODE ISLAND

The Golden Opportunity in the Export Trade.

(Continued from page 9)

European motors, yet the American machines have met with little difficulty in developing markets in many parts of the world, once they were introduced. There is hardly one, if indeed there is one, oil engine of European manufacture, whether marine or stationary, that does not require the continual use of a live lamp or torch. On the other hand, no American oil engines require the torch for more than a few minutes at the start. Furthermore, in simplicity of construction, indeed in solidity of construction, the American oil machines beat their European competitors. These facts are pretty generally acknowledged.

Indeed, it may be a mistake on the part of our manufacturers, that, believing the facts to be known and acknowledged, they do not invariably and more emphatically preach the qualities of their own products. Certain slowness in getting business going in a new market may sometimes have resulted, but sales when machines have arrived and have begun to speak for themselves, have more than compensated the American manufacturers for the comparatively light work and effort required in getting their start. But there is a lesson here for manufacturers in general. It is, learn to tell your story forcefully and effectively. Export trade depends largely on correspondence. The study of how to make that correspondence carry one's message convincingly must have the special attention of manufacturers who want to get all there is in the export trade for them.

As to gasoline motors, there is only this now to be said. They have established themselves throughout the world and our two-cycle engines have made their way in the face of strongly conservative opposition, notably in Great Britain. As the writer has urged before in these columns, some of our manufacturers might advantageously devote more attention to the finishing of their motors. If a little expense is thereby involved, the results will be found to warrant a little higher price from buyers in other countries who often want performances coupled with appearance.

Perhaps, however, the most notable among the successes of American marine motors in foreign fields have been won by our convertible gasoline engines operating on kerosene. Several manufacturers in this line are to be ranked among the most successful exporters in the United States. It seems clear enough that those manufacturers who have not heretofore paid special attention to devices for transforming their gasoline engines into kerosene burners would do well to study that problem most seriously.

As undoubtedly will be the case with American automobiles, it appears probable that American marine motors will find a greatly increased and broadened market in Europe after the war is over. The purchases by the British Government of American motors will undoubtedly contribute to our prestige in the United Kingdom. The numerous uses to be found for marine motors, from heavy-duty engines up to speed craft, will almost certainly be developed rapidly after the war. The reputation that our American motors have earned, in the face of strong local competition, will place our manufacturers in the strongest possible position to get the major part of this trade as it develops.

The trade in motors and motor boats in other parts of the world appears promising, even now when most other countries find themselves in precisely the same position that we in the United States have to acknowledge we ourselves have been in of late, that is, with financial and economic conditions upset and confidence trembling. It is agreeable, however, to note that Australia, one of our best and most promising markets for marine engines, is at this crisis perhaps the strongest market in the world, and the most promising, least disturbed or affected by the great convulsion in Europe. While existing conditions in some of the Latin American markets are none too satisfactory just at this moment, yet in most of them signs point to better times soon to arrive, while it is by no means to be forgotten that business never stops in any country and people will buy motor boats for pleasure no less than for work and will find means of paying for them, too, when the right sort of effective method is employed in persuading the prospective customer.

Marilda, a Deck-Cabin Cruiser.

(Continued from page 24)

The special feature of the construction of this vessel lies in the use of steam bent white oak frames which are carried between the windows up to the main deck level, these frames being lapped across the keel instead of being fitted with floors.

The upper strength member in this boat is carried at the main deck level, consisting of heavy shelves and clamps, giving an exceedingly rigid construction.

The under body design of this vessel has been worked out with a fairly flat floor, round bilges which sweep into club-footed fore body and with easy lines up to the transom.

On her acceptance trials this vessel showed a speed of 10.28 miles per hour, which proved the superiority of this under body form over that of a square bilge or usual houseboat form.

The deck accommodations on this vessel consist of a very roomy main deck extending five-sixths of the length of the vessel, on which a large deck house is a fine sheltered observation room and is equipped with chart desk, stairs to lower cabin and tapestry upholstered willow furniture. Also, aft of the deck house a very large lounging seat is arranged with mahogany top and back, which seat is also used to cover the gasoline and lubricating oil tanks so that no inflammable materials are carried in the hull proper.

Aft of the main deck is a sunken quarter deck protected by a low bulwark which is allotted to the use of the crew. As may be seen from the photographs, her deck has the usual arrangement of railings, continuous awning, yacht type gangway and carries a 14-foot by 6-inch specially built motor tender on the port side. The quarter deck is covered also by an awning and the 9-foot by 3-inch dinghy is carried on davits across the front.

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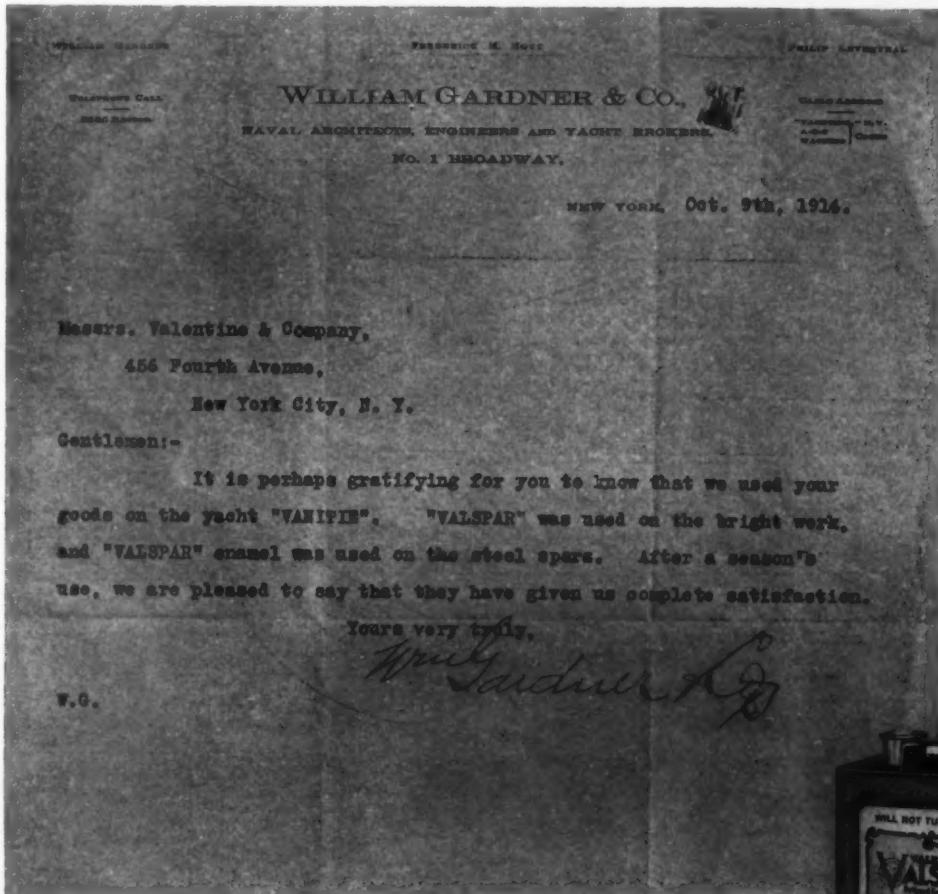
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Yard and Shop.

(Continued from page 62)

The Spokane Hardware Co., of Spokane, Wash., have also closed with the Loew-Victor Engine Co. to represent them east of the Cascade Mountains in the State of Washington and for the State of Idaho. The Marine Engine & Supply Co., of Los Angeles, Cal., will handle Loew-Victor engines in the territory bounded by the Colorado River between Arizona and California, and all of Southern California from Santa Barbara out to the Mexican line. With Messrs. Taylor & Young in Vancouver, Lewis Anderson, Ford & Co. in Seattle, Roger Manufacturing Co. in Portland, Ore., Mr. Condon constantly on the job, the Loew-Victor Engine Co. is in position to give splendid service for delivery of engines and repair parts on the Pacific Coast.

Rita.

Early this season the H. C. Minett Motor Boat Works, of Brantford, Ontario, turned out for C. H. Bonstraeger, of Pittsburgh, the 50-foot Rita, a fine example of day cruiser. Rita is a very roomy boat for her dimensions, providing accommodations for 40 people for day cruising and sleeping quarters for eight and the crew. However, day cruising is the principal use for which she has been put.

Her length over all is 50 feet, with a beam measurement of 9 feet 4 inches. The power plant is a regular Type C, 6 cylinder Van Blerck motor, and when turning at 1000 r.p.m., develops a conservative 60 h.p. and gives this comfortable cruiser a speed of 17 to 18 miles per hour. A very noticeable lack of vibration is one of the comforts of this boat, regardless of the speed at which the motor is driven. Another noticeable and equally pleasing feature is the great mileage obtainable from a given quantity of fuel, even at the maximum speed.

Wisconsin Buys a Bale.

The Wisconsin Machinery & Mfg. Co., of Milwaukee, Wis., manufacturers of the "Wisconsin row boat motor, have authorized all their southern representatives to purchase for them one bale of cotton for every third row boat motor sold in the cotton belt. In such sections where the company is not represented one bale of cotton will be accepted as part payment on each order for three row boat motors.

Making Factory Representatives.

Every year various distributors of the Loew-Victor Engine Company, after boating season has closed, send one or two of their mechanics to the factory at Chicago, where they are given employment from October until February, and as these return early every season, the Loew-Victor Company always posts them to any of their important manufacturing or assembling plants in Chicago. This enables Loew-Victor dealers to give owners of Loew-Victor engines services of a trained factory expert at all times. The Loew-Victor Engine Co. lay stress upon the fact that they do not lose interest in their engines after they have been sold and always remember the fact that their motors bear their name-plate.

Kramm with Standard.

The Standard Co., Torrington, Conn., have engaged the services of H. H. Kramm to make a special trip through the Southern States with a duplicate of the Flying Eagle, the little 9 foot boat with the 20 h.p. Eagle motor installed, which created such a sensation in the South Jersey region.

It is Mr. Kramm's intention to make the whole trip, or at least as much of it as possible, in this little boat, and with numerous demonstrations, and any races which he may enter, will render Eagle dealers in this section considerable assistance.

Indian.

A runabout which has probably seen more service this past summer than most other pleasure boat in local waters is Indian, owned by J. C. Pyle, of Bayonne, N. J. Mr. Pyle is a veritable "water dog," and he got his boat launched early in the spring. There was scarcely an afternoon this season, both week days and Sundays, that he was not to be seen on one of the many slips he took through New York Bay and adjoining waters. The weather was never severe enough to keep him at his anchorage, even when much larger boats did not venture out. With a good steady boat, a rough sea only added to the exhilaration.

His boat is a Doyle "V" bottom, 22½ feet Auto Express with round sides, regularly put out by the American Launch Co., of Bayonne, N. J. He purchased her in what is termed "hull in rough," and finished the work himself. Indian is powered with a 4 cylinder 4 cycle 14 h.p. Grimm motor, and makes over 13 miles per hour.

Prospector.

A recent record-breaking cruise of the Prospector, a 35 foot motor craft, up and over the violent Rush Creek Rapids, near the head-waters of the Snake River in Washington, explodes the old sophistry that inland motor-boating lacks the thrills of the open waters.

This plucky little craft reached the highest point ever won by any boat ascending the river, climbing a grade of more than 800 feet against the mighty waters of the turbulent Snake.

Two powerful 100 h.p. Scripps marine motors drove the plowing boat, fighting cross swells and boiling, seething waters, sometimes on her beam's end, for three-quarters of a mile up a grade of twenty feet, to the top of the rapids. At any point in the three-quarter of a mile fight, any faltering or failure of either motor would have been disastrous.

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The well known Sterling "Kid" 10 h.p. tender engine, is equipped with Bosch-Rushmore Electric Starting Motor. It has been a hard problem for the Sterling Engine Co. to find an electric starting motor small enough and efficient enough to attach to this unique, little engine. For several months their experimental department has been trying out various motors submitted to them, but it was not until recently that the Rushmore Dynamo Works (now owned by the Bosch Magneto Co.), designed and built this special little motor for this purpose.

Lura A.

One of the smartest boats that ever floated on Louisiana waters is the 30 foot by 6 foot 6 inches Lura A, built by the Reliance Motor Boat Co., of New York City, for Fred L. Lucas, also of New York, and Delta Farms, Lockport, Louisiana. She is a George F. Crouch design, with underbody similar to that of the famous Cinderella, which won many racing honors in 1913, and like the Lura A, is Van Blerck powered. The remarkable lines of this boat make it capable of the surprising speed of 25 miles an hour with a 65 h.p. four cylinder Van Blerck motor, which is equipped with electric starting and lighting outfit.

Lura A is specially designed for use on Lake Salvador, Louisiana, which is very shallow, and upon which nasty waves are kicked up by the wind. With these conditions in mind her design was calculated accordingly, and her style suggests rather that of a day cruiser, although she is really of the runabout type.

The power plant is a regular 1914 model, type C, 4 cylinder Van Blerck runabout motor, rated at 65 h.p. at 1200 r.p.m., but with reserve power up to 1500 r.p.m., at which speed according to the now celebrated horsepower tests made by Mr. Crouch, naval architect and marine engineer, of New York, it develops 88 h.p. Lura A represents a rather bold, but equally welcome departure from the older types of day cruisers with their heavier and slower engines, and consequently slower boats. This boat has been in daily service at the Delta Farms throughout this season and excellent service is reported from the standpoint of both boat and motor.

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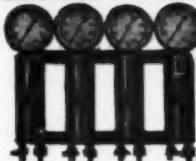
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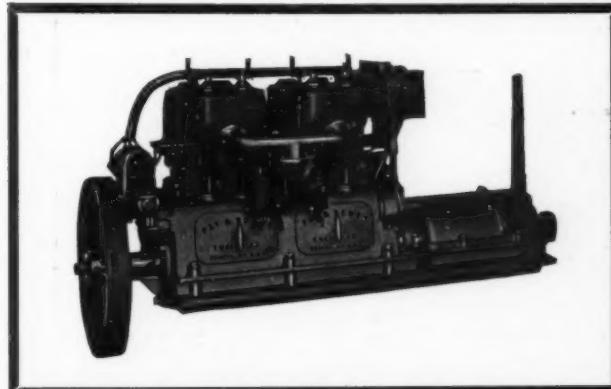
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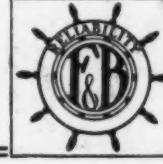
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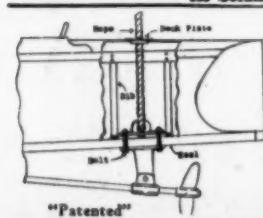
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The Problem of Correct Design.

(Continued from page 11)

and get an almost good boat.

Getting back to the freakish features. Strictly speaking nothing should be introduced into a design that is not useful. Utility should be the acid test for any feature. In a work boat the owner can not afford a single bit of equipment except that which plays some part in the working of the boat at some time or other. But in pleasure craft what pleases the owner is often the criterion, since his boat is built to please him, that is its usefulness and what may not gibe with our ideas may yet please him, and hence our ideas of usefulness must be broad. He may fancy a ram bow, or a rapid fire gun. Though neither are ever used for their designed purpose, if he cares to put his money into them because he will take pleasure from seeing them a part of his boat he is justified. Although our ideas of common sense may not feel satisfied, yet common sense must say that the owner's satisfaction is to be reckoned with. Yet any feature which will injure the sale of his boat should be pointed out.

Yet common sense demands that all parts of a boat harmonize. A feature borrowed from some other type and seemingly grafted on in a conspicuous place shows up badly. For instance, the auto steerer is suited to runabouts, but when we see a raking auto steerer placed on the forward raised deck of a big bodied raised deck cruiser it seems out of place. A cruiser with a horizontal auto wheel or a vertical wheel would seem all right, but the other type seems too toy-like for the work it must do, at least it looks that way; it does not harmonize with the boat.

On the whole, the most perfect boat of any type is simply the result of using common sense. The purpose of these notes is not idle criticism, but simply to recall that there is a fitness in things which can not be disregarded and without which you cannot have the perfect boat. Just glance at any picture of some exceptionally good looking boat and you will see harmony, which is but common sense. Nothing else can make up for the lack of this in boat design.

Marilda—A Deck Cabin Cruiser.

(Continued from page 84)

The ground tackle equipment consists of an Andrade windlass, $\frac{1}{2}$ " chain, stockless anchors, anchor davit, etc.

The vessel is controled from a position forward of the deck-house, where a pulpit mounting the steering wheel, telegraphs and binnacle is located. A drop chart table is attached to the forward side of the deckhouse and for occasional use a special extension of the steering gear is fitted for steering from inside the deck-house.

The owner's quarters below decks are very neatly finished in white enamel with mahogany trim, the main deck beams being carried with a straight lower face and never-split panels worked in between them, trimmed with mahogany molding so that all evidence of cambered deck is removed. With mahogany door casings, bureau tops, berth fronts, cushions, retainers, etc., with the dark green upholstered cushions, a very pleasing contrasted effect is secured.

The owner's accommodations consist of a large double stateroom forward with a large and a small hanging closet, bureau and seat, with a central passage leading aft to the main salon or dining room, which is located just forward of the machinery. The main salon is equipped with special drop leaf mahogany table with lockers underneath, has locker seats on two sides, and is arranged with china and glass cabinet. The galley is located on the port side of the main salon, just aft of the main stairway, and is equipped with ice box holding 1000 lbs. of ice in addition to provision space; alcohol stoves and the usual arrangement of lockers, sink, etc.



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400 Woodbridge Street, W., Detroit, Mich.

Smith's Varnishes
On All Three Cup Defenders
EDWARD SMITH & CO.
New York and Chicago

SHAW' PROPELLER

(Patented)

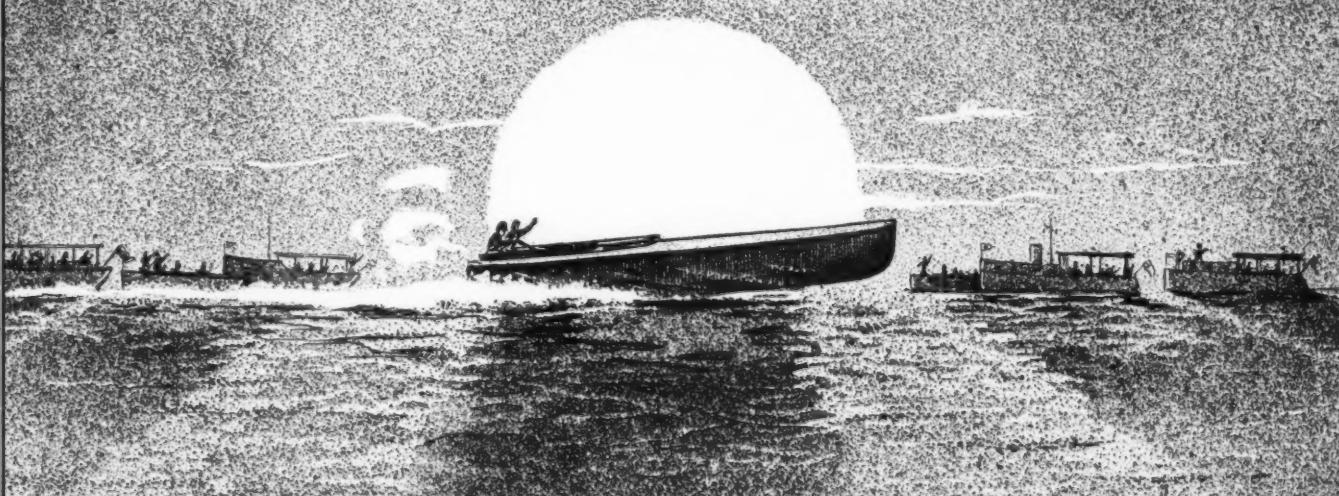
Scientifically designed to secure maximum
thrust efficiency from every square inch of
surface—and does it. Manganese bronze
Guaranteed.

Write for prices and guarantees.
SHAW PROPELLER CO., Board of Trade Building
Boston, Mass.

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Caille PERFECTION Marine Engines



This 16 Page Message
from Mr. Caille Constitutes
the Largest Marine
Engine Advertisement
ever Published

The Caille Perfection Motor Co.
1456 Caille St. Detroit, Mich.



ARTHUR CAILLE President
The Caille Perfection Motor Company



Caille Perfection Engines Come In All Sizes From 2 H.P. To 30 H.P. And Are Now Being Furnished To The American, Canadian, British, Spanish, Italian, Russian And British Guiana Governments.

Long Distance Telephone
North 1546-1547
Private exchange connecting
with all departments.

Detroit, U.S.A.

MR. ENGINE BUYER:-

This sixteen-page marine engine advertisement--the largest ever published--is printed for the express purpose of helping you to select a motor for that new boat you have in mind, or is it the old one you are going to re-model? In either event, the time is ripe for you to consider not only the engine, its horsepower, its equipment and the numerous other incidentals of more or less importance, but the actual firm who build, who sell and who guarantee the engine.

Briefly, the Caille Perfection policy is just this:
(1) TO BUILD an engine as well as our thirteen years' motor manufacturing experience will enable us. (2) TO DISTRIBUTE our product through a system of dependable dealers whom we "back-up" and protect, that they in turn may serve and fully protect you. (3) TO GUARANTEE our machines positively in every detail, and extend to you the privilege of WRITING YOUR OWN GUARANTEE.

I trust you will sufficiently value this announcement to give it the same attention I have. It is not an ordinary advertisement. On the contrary, it has been designed for the recording of our manufacturing ideals, and incidentally giving you a peep into the methods now in vogue throughout the Caille plant. I have refrained from elaborating on our 1915 line of motors, for I take it, if you are at all interested in the Caille machine, you will at least want a copy of the Blue Book for full information.

In behalf of the Caille organization, I take this opportunity to express my appreciation to the boating public and dealers alike, for the support they have given our business, for the encouragement they have given our Research Department, and for the approval shown in behalf of our efforts to broaden and improve the factor of service.

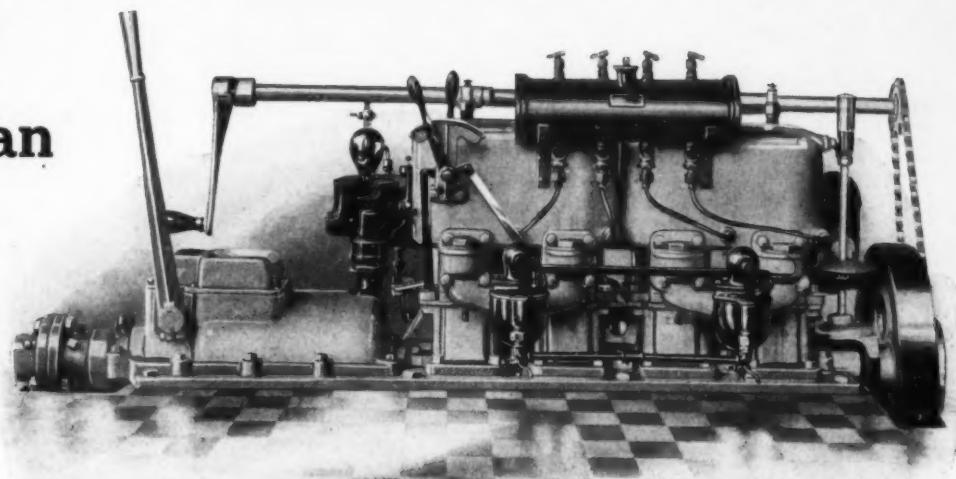
Cordially Yours,

Albert Caille

President,
The Caille Perfection Motor Company.



Caille's American Gentle- man 18 H.P.



Caille Success and Its Foundation

IT IS more than mere chance that has caused The Caille Perfection Motor Company to grow to be the *world's largest builders of two-cycle marine motors*, within a period of thirteen years. More than good business management, ample finance or fair treatment of customers. Superior merit in the design and construction of the engines themselves must be the chief element in such success. In operations of this magnitude the law of averages cannot be denied. We might succeed in selling a few poor engines, but we couldn't possibly sell as many as we have sold of the Caille Perfection. Chance may enter into smaller instances but in the long run the fittest invariably survives.

Merit, then, is the keystone of Caille growth. The other elements of success are there, too, all of which have contributed to the result. Each of these elements adds to the stability of your investment in a Caille Perfection Engine. The service is complete; nothing is lacking. There are other good engines, of course. But no other maker has the facilities to turn out engines of equal quality at as low costs, so the Caille does offer more value, dollar for dollar, than any other engine built. Investigation and comparisons will confirm this conclusion.

The large Caille financial and manufacturing resources are a direct benefit to every dealer and user of a Caille Perfection Motor. They insure continued service from the factory after the motor is sold, maximum economy in production and many advantageous methods of manufacture which could not be afforded in manufacturing on a smaller scale. They give a definite and permanent value to the broad Caille guarantee.

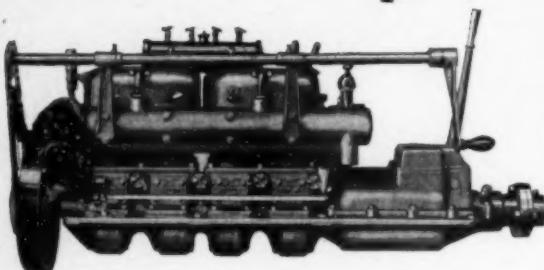
We can produce a better engine for the money than other builders because we have the advantages of great economy from large quantity production, and better manufacturing facilities. The saving is put back into the quality of the engine. And this quality includes both quality materials and quality workmanship.

The marine engine industry has reached a point of popularity where it demands manufacturing on the same scale that has

made the most popular automobiles so successful. The Caille motor is the only marine engine that has been able to comply with this condition. That is why more Caille Perfection motors are built than any other two-cycle engine, and why the Caille is sold and used in every part of the world.

The Caille is the unquestioned leader of the marine engine industry. Attaining its present size and popularity through sheer merit and superiority, we are determined to maintain its position by giving our patrons the best service they could wish for. We have both the determination, and the resources to fulfill it.

We are glad to have you compare the Caille, point for point, with any other engines you know of. When you have weighed them all, considering every detail fairly, without prejudice for or against any make of engine, we are satisfied you will buy the Caille Perfection.



Caille's American Gentleman Removed from Boat—Exhaust Side.

and batteries as desired. Note the detailed illustration of this machine on the preceding page.

Caille's American Gentleman 18 H. P.

Here is an engine thoroughbred, a machine that arouses immediate attention wherever it is seen. The right type of motor for cruiser or gentleman's runabout, equipped with rear starter so arranged that the motor can be installed under the deck—starting handle can be fastened to bulk-head. Caille's American Gentleman is built complete in one unit with gear and engine, of course, on the same bed. The 1915 equipment also includes rear controls, multiple oiler, Bosch high tension magneto or coil

Caille Construction

Only One Caille Quality

There are many different Caille models and as many different types—a most complete line to choose from—but there is only one Caille quality. That quality is the best that has ever been put into any marine engine, in design, materials, workmanship and finish. With the largest manufacturing facilities and broadest experience it is only natural that Caille quality should benefit.

Special materials are used for every part and every lot of material delivered to our factory is thoroughly analyzed to insure strict conformity with our rigid specifications. Very close limits of accuracy are required from our workmen and repeated inspection throughout every process of manufacture eliminates the possibility of the slightest defect in the finished product.

Allowances of strength for severe service and overload are more than ample in every part of our design. The Caille Perfection is as light an engine as it is wise to build, still there is a wide margin of safety to successfully withstand every strain the engine is liable to meet. Bearings are especially large and provision is made for positive lubrication of every wearing surface.

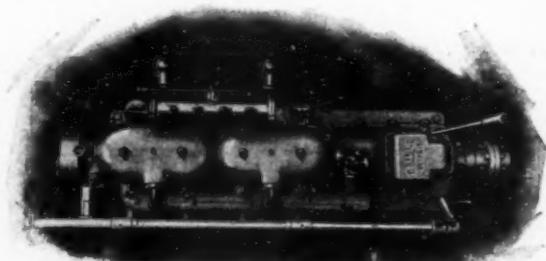
The Finest Equipment Used

The quality of the equipment furnished on an engine is a fair index of the quality of the engine itself. We have selected only the best devices and instruments the market affords to equip Caille Perfection machines and in some cases have had to design special equipments of our own to insure the reliability and freedom from trouble we want all Caille owners to enjoy.

Fifteen Years Your Servant

The simplicity and accessibility of Caille Perfection design eliminates a lot of labor and expense for the owner. There are a minimum number of parts and they are all designed so that any part can be got at with the least amount of trouble.

A big item in favor of an engine built by a large manufacturer is the surety of getting duplicate parts for repair or replacement. Any piece of machinery must show some wear in the course of time and if worn parts can be replaced, the whole engine can be kept running like new as long as the owner cares to use it, whether it is for five years or fifteen. Besides carrying a sufficient stock of parts for replacement orders we have the jigs and patterns for every part of every engine we ever made. Parts can always be duplicated for a fraction of what an ordinary machinist would charge. And when you buy parts for replacement from us they are practically interchangeable with the old part, the only fitting required being where proper allowance has been made for wear.



Caille's American Gentleman Installed in Hull—Top View.



8 H. P. Heavy Duty Caille Perfection



A Mechanical Masterpiece

THE performance of the ordinary heavy duty motor in a heavy sea is ever the same—trouble. If it is not *battery* trouble, then it is *magneto* trouble—if it is not *starting* trouble, then it is *adjusting* trouble—if it is not one thing, it is certain to be another; just one trouble after another. The Caille Perfection heavy duty motor is *trouble-proof*. Here is an engine that combines more really good features and answers a greater variety of purposes than any other motor built, regardless of price. It is, in short, a mechanical masterpiece.

The Caille Meets Every Requirement

The 8 H. P. heavy duty has been called the work-horse of the Caille fleet. She is strictly a commercial or business engine, designed specially to stand the hard knocks and constant service a heavy duty engine usually gets.

Every part of this machine is built for the kind of work it is destined to perform. The allowances of strength and safety are particularly liberal. The shaft and connecting rod are heavy and strong, the bearings unusually large, every wearing surface positively lubricated, and the proportions throughout are such as you would expect to find only in a much larger engine.

This engine will give maximum service hour after hour, day after day, year after year. Given sufficient gasoline, oil, grease and spark, it will run continuously under full load at full speed without showing the slightest indication of wear after years of steady use. With reasonably good care it should outlast any boat in which it is installed.

You will find these motors giving perfect satisfaction in fishing boats, tow boats, oyster dredges, heavy auxiliaries and similar craft in every part of the world. You couldn't find a more reliable, more durable or more economical heavy duty engine of this power. It can be furnished to burn kerosene and other liquid fuels.

Twelve Hours Without a Stop

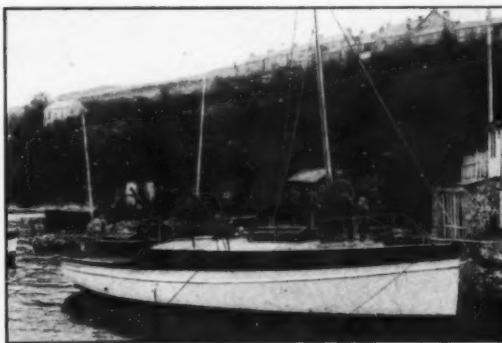
I have used two of your 8 H. P. Heavy Duty Engines for three years. One of them I have used in a 25-ft. launch to tow with. I have towed 6,000 tons of freight from Matagorda to College Port Pumping Plant in the last 18 months, 9 miles up Colorado River, and some days the engine has run ten and twelve hours without a stop. When river was on a rise I have run it constantly and have never had it to fail once, not even one time. I can get affidavits from all the men on the work that this is true. I haven't had to take a liner out of crank and there is no wear yet. A steam engine is not as reliable as the "Perfection," for the "Perfection" is always ready to run and runs under all conditions. I have owned and run steam and gasoline engines of all kinds for twenty years and know a little.

Yours truly,

W. E. McNABB,
Matagorda, Texas.

5,000 Miles With Heavy Duty

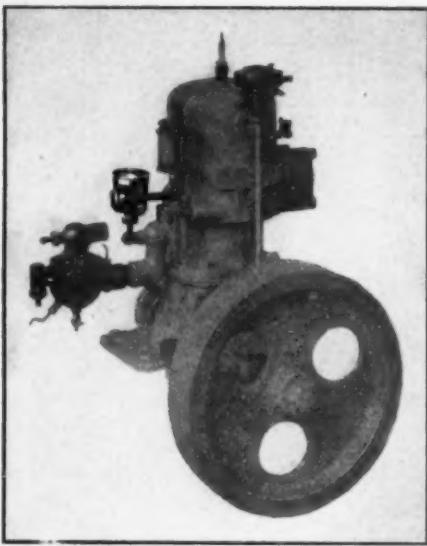
"Outdoor Life" was the name of the boat—the man was J. A. Ricker, of Newport Beach, California. "Outdoor Life," a 25-footer, powered with an 8 H. P. Caille Perfection Heavy Duty Motor, sailed from Seattle, U. S. A., with Mr. Ricker and one companion as crew—their destination was Nome, Alaska. The cruise was made by way of the "inside passage," that is to say, from Seattle through Georgia Strait and Queen Charlotte Sound, then boldly striking out across the open Pacific to Skagway, Alaska. From Skagway, "Outdoor Life" was carried 40 miles on a flat car over that part of the Rockies known as the White Pass via the White Pass & Yukon Railway. At White Horse, the terminus, "Outdoor Life" was relaunched in the head waters of the mighty Yukon River. Here the voyage was renewed. The intrepid Ricker had a most adventurous trip down the Yukon, traveling right up into the Arctic Circle, finally reaching the Behring Sea and his objective point, Nome. It is worthy of note that Mr. Ricker, having disposed of "Outdoor Life" and its equipment at Nome, has just purchased one of our new 1915 model 14 H. P. Heavy Duty Engines to be used on another voyage that will begin shortly.



"Ecila," Powered With Two 8 H. P. Caille Heavy Duty Machines—She Is Now Taking Part in the European War.

Caille Motors in The European War

The adjoining photograph of the "Ecila" is of particular interest. The "Ecila," powered with two Caille 8 H. P. Heavy Duty Motors, is the property of W. Eaton Parker, Caille Distributor for Wales, England. When the present hostilities broke out between England and Germany, Mr. Parker's boat was seized by the British Admiralty and she is now doing duty with Admiral Jellicoe's fleet in the North Sea. On testing out Mr. Parker's Caille equipped "Ecila," the naval authorities pronounced her "the finest equipped dispatch cutter in the service." You will find the Caille Heavy Duty machines in use in every civilized country of the world—doing the work they were built to do and doing it well. Complete information will be found in the Caille Blue Book—use the coupon.



Caille Kerosene Carburetor and Its Location on Engine.

Here's Big Fuel Economy When Gasoline Prices Soar

When the price of gasoline goes up is not the time to consider fuel economy—*now is the time*. Be prepared for the fluctuation of gasoline prices by using the Kerosene Injector equipped Caille. The Caille Injector works on the “spurt” principle and enables you to operate your motor with ordinary kerosene or coal oil. The Injector is a regular miser on fuel, but at the same time gives excellent results. Designed by a French engineer of twenty years’ experience with many of the leading firms of Europe. We can recommend the Caille Kerosene Injector in the highest terms.

An X-Ray View of the Motor

To appreciate the excellent workmanship of each Caille machine, a trip through our factory is essential. Here one can gain a better idea of not only the high-grade material used, but the fine finish of each individual part in the final make-up of the entire motor. If such a thing were possible, an X-ray view of the Caille would disclose the same sweet and smooth operation of parts that is found elsewhere only in the highest priced automobile engines. The Caille product is well named “Perfection”—perfection in construction and perfection in operation give *perfection* in service.

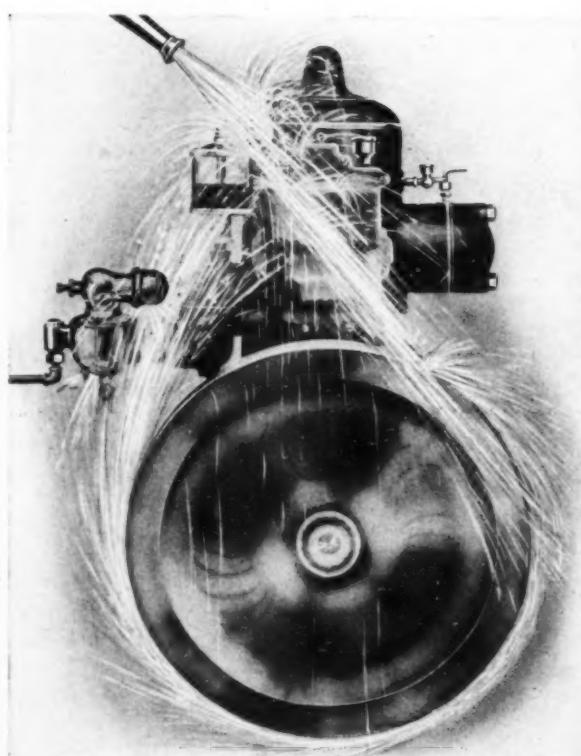
The Value Is All Under The Paint

Don’t buy any make of motor on the strength of its outer appearances. Make it your business to find out how the machine is made and built. If you are not familiar with engines, get some good mechanic to go with you to the various dealers’ agencies and have his expert opinion on the different types of motors.

In other words, make comparisons. Measure each motor point for point with the other—get to the very inside of the proposition. In the final show-down, we are confident you will decide in favor of the Caille. In our machines the value is all *under* the paint, and it is by just such comparisons as above suggested, that we have succeeded in winning so large a trade.

Squirt A Hose On This Caille, The Ignition System Is Waterproof

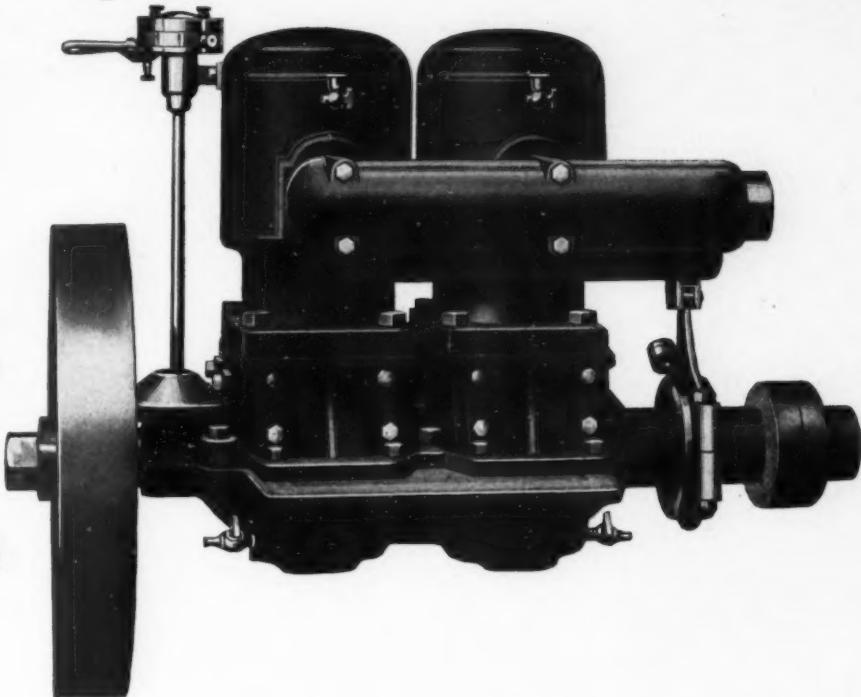
When first introduced three years ago, the Caille waterproof ignition system was the sensation of the entire engine industry, and, at the time, it marked the greatest single achievement of its kind in recent years. The *Caille Igniter* for 1915, is, in its general construction, practically the same as when first placed on the market, except for a number of refinements that have actually made it more efficient than ever. The *Caille Igniter* continues to be one of our most talked about features. It obviates the use of battery, magneto, timer or coils. The steel helmet protects the spark plug—a “rain-coat” insulates the single wire used on the entire system.



An Actual Test—The Caille Heavy Duty Motor Equipped With Igniter Continued to Operate (Without a Single Stop) Completely Submerged in Water.



14 H. P.
and
18 to 20 H. P.
Caille
Perfection



Husky Machines For Hard Service

These engines are intended for boats from 30 to 40 feet, particularly the heavier ones, where more severe service is required than can be expected from any engine of smaller power or lighter construction.

Designed to stand hard, continuous service, nothing but outright abuse can affect their reliability, smooth power and durability. Such service as would be considered abuse for ordinary engines is all in the day's work for these models. There is nothing weak or delicate about them. Given sufficient fuel, lubricant and electricity, nothing can cause either machine to stop except the man who drives the boat.

The Fourteen's Unusual Adaptability

The 14 H. P. Caille will win every race wherein it competes with engines of equal rated horsepower. It is not built as light as a special speed motor, yet it is light for its power and very fast, carrying a full load easily at 800 R.P.M. Nor is it built as heavy as the heavy duty motor, yet it has the heavy duty ability of running, hour after hour, under full load without heating or straining.

Although not built especially for heavy duty purposes, you will find that hundreds of these motors are being used with utmost satisfaction in work of the most severe kind. We don't advise any owner to under-power his boat, but we have many times been pleasantly surprised by the ability this 14 H. P. Caille has shown in boats for which we had no intention of recommending it.

Heavy Duty In All But The Name

The 18 to 20 H. P. Caille Perfection is, in point of design, practically the same as the 14 H. P. type. We don't refer to it as being exclusively a heavy duty motor, however, because it is used so extensively in cruisers and big pleasure launches. But, it is really a heavy duty machine in everything but the name. Every individual part has been designed for extra strength, and we can recommend it highly for real, hard, constant service.

The rating of 18 to 20 H.P. is explained this way—18 is about what an engine of this motor's dimensions is expected to make, and 20 or better is what it actually develops on tests. The maximum speed is 650 R.P.M., ample for a power outfit of this kind. It is adapted for heavy boats and heavy work, or in lighter boats it will give satisfactory speed when the right size and pitch of wheel is used.

See Your Dealer About Our 30-Day Free Trial Offer

Towed Log Boom With a Caille

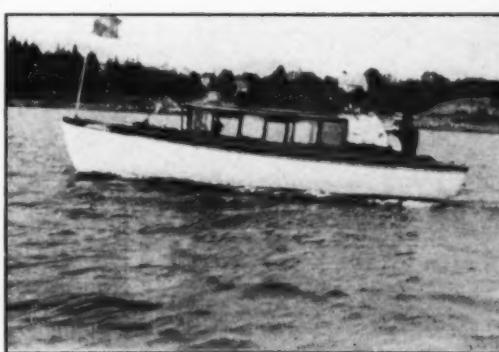
I cannot praise your 8 H.P. too much. It is the greatest motor of the two port marine type engine in this harbor. It has a very wide range of speed; I can start it as often as I wish with the Timer on switch. I am using my two engines every day; never had one minute's trouble.

I towed 200 thousand feet of logs in one boom 17 miles with my two engines, and never had a miss in the 14 hours.

I remain,

Yours very truly,

WALTER CONROD,
Dartmouth, Nova Scotia.



"Leone," Equipped With Two 8 H.P. Caille Heavy Duty Motors. Owned by Walter Conrod, Esq., Dartmouth, Nova Scotia. Read His Letter.

Fuel Economy With a Caille

I may mention that I am in company with Mr. Jansson in the fishing business, for which we bought from you a 14 H. P. kerosene motor.

We are so pleased as we can be over your motor, which is truly named "Perfection." The motor has to push a 31 ft. launch 2 ft. 4 in. beam and draws 1 ft. 10 in. of water. She works on 115 grade paraffin like a charm.

Really I cannot speak too highly of your workmanship.

You can guess what a saving it is to us. For instance, paraffin here costs one shilling per gallon and gasoline costs two shillings and sixpence per gallon, so you see

your motor is an valuable asset to us.

No one will convince me otherwise than that the Caille Perfection motor is the best made in the States. She does all you claim for her in your catalog and uses 2/8 of a pint per H. P. per hour. Later on we shall have the launch photographed and sent to you. When we want another motor, which I think we may require shortly, you may depend, it will be a Perfection.

Wishing you every luck, and complimenting you for your good workmanship, I remain,

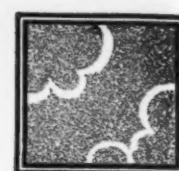
Yours sincerely,

T. Opgard.

Caille 20a, Correa.

Tocopilla, Chile.

P. S. You can use this for advertising if you wish, but I don't think your engines want much advertising, they speak for themselves.



"Bob" Power Calls It "Some Record"

Robert E. Power, the well known motor boat racing authority and editor of "Power Boating" in writing of the phenomenal showing of "Silver Heels," calls it, "Some Record"—and thousands of others have remarked the same thing. "Silver Heels" is without question the most consistent race boat ever built and has been declared the 1914 Champion. "Silver Heels" was equipped with an 8 H. P. Caille Perfection Unit Plant.

15 Miles Per Hour

"Silver Heels," a 16-foot hydroplane designed and built by Eli Townsend, is the property of Master Arthur Gilmore, Stone Harbor, N. J. The speed secured with the Caille equipment was 15 miles per hour. This boat made a clean sweep of all the big racing events of the season, including all the championship events of the South Jersey Racing Association. Her record is nine firsts in nine starts.

Results Count

Judge the motor you have under consideration by its performance—that's the only sure and safe way of gauging its qualities. Remember, it's results, not claims, that you are interested in, for results count. The performance of Caille motors has always been a tribute to their in-built quality. There are hundreds of records, endurance tests, blue ribbons and trophies to their credit.

Proof of the Pudding

In the above photograph please note the "Silver Heels'" crew. Master Gilmore the 16-year old owner is at the wheel—his General Utility Man, aged 14 years, is sitting on the deck. What better proof of Caille simplicity and dependability do you require than this? The frank simplicity of the Caille's construction has been the chief factor in promoting their use among women motorists—and there are plenty of children, too, who handle the Caille Perfection with the same reserve, ease and confidence as their elders.

"Could I Copyright The Word 'Efficient', I Would" A. Arthur Caille.

Get the Text of This Sermon

I want to express my appreciation of the prompt and generous manner in which you have met the guarantee on your engine, which I purchased from the Mullins Co.

If any word from me at any time will be of value as a testimonial, I shall be very glad, indeed, to give it.

Yours truly,
H. K. HAWLEY, Minister,
First Congregational Church,
Fort Atkinson, Wis.



1908 Caille Model Wins 1914 Race

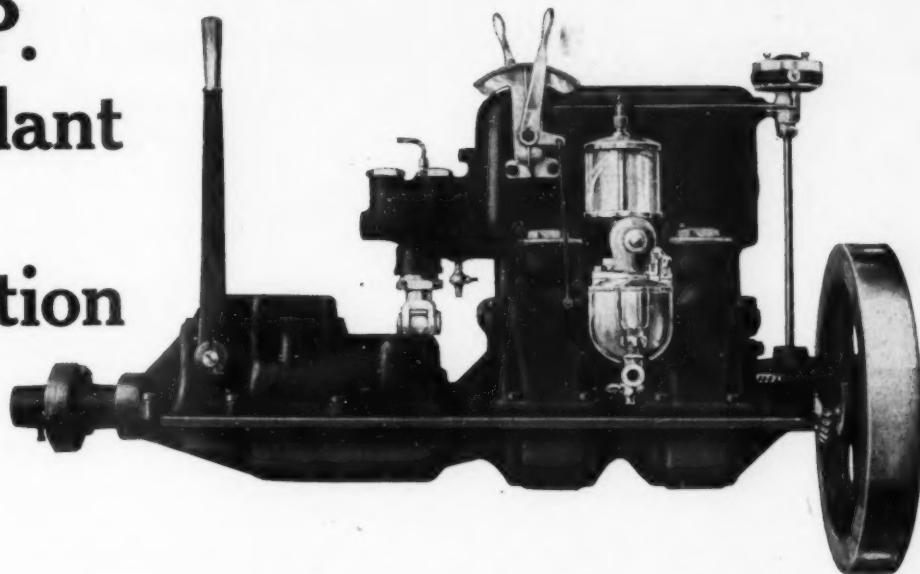
Enclosed find clipping out of the "Morning News" giving account of the race Labor Day, 7th inst. My boat SWAN won endurance race with perfect engine score. The race was run under A. P. Boat Ass'n. rules. I have the same 8 H.P. Caille Perfection 1908 model. This engine has won four out of six times first prize and always had perfect engine endurance in the others. This speaks well for this engine. MARYMIT 8 double cylinder Caille Perfection 1913 model had perfect engine score also.

Yours truly,
EUGENE HARMON
Savannah, Ga.

"Flower Viewing" Near Tokio, Japan, from a Native Boat Equipped with 6 H.P. Caille Perfection.



8 H. P. Unit Plant Caille Perfection



The Motor De Luxe

Unexcelled in beauty of appearance and operation, this is the motor de luxe of all the marine power plants of its size. You cannot buy a motor of any make or type to do the same work, that will give you any greater all-around satisfaction than the Caille 8 H. P. unit plant.

The particular purpose of this machine is for use in fast launches, runabouts and speed boats up to 26 feet, in family boats, in small cruisers and passenger launches, wherever the owner appreciates the advantages of a complete power equipment and cannot afford to sacrifice room or carrying capacity for a bulky engine and separate reverse gear.

The Caille unit power plant is not simply a stock engine plus a stock reverse gear. It is a perfect unit that is truly "Perfection" in every detail. The reverse gear is designed and adapted especially for the motor and is built integral with it. The gear is as much a part of the engine as the cylinders or fly-wheel.

Engineers Say it is the Only Correct Way

The unit principle is an idea that has gained the highest degree of popularity in both marine and automobile power plant construction. From an engineering standpoint it is the only correct type of construction to use in marine work. Stationary engines and machinery are mounted on heavy concrete or iron foundations, with every provision to eliminate vibration and distortion.

Marine engines are mounted on a very different kind of foundation. The engine must be designed so as to counteract its own vibration. Every hull, even the heaviest built ones, must have some "give," meaning certain

distortion for the connections, bearings and shafting between the engine and the propeller. A flexible joint or coupling placed at every point necessary to overcome this distortion means wasted power through friction, and higher cost than to use a unit power plant in the first place.

The Caille Unit Power Plant is an example of the highest development of modern marine engineering. It is the most compact and lightest method of construction. It can be used in light hulls that would not stand the weight and strain or have sufficient room for engine and gear built separately. The gears can never bind.

The Engine That Drove "Silver Heels" to Success



Mr. F. F. Draper, of Brasfield, Arkansas, Towing His House-boat and Camp with an 8 H.P. Caille Unit Plant—
Speed 6 Miles Per Hour.

Police Boat Service O.K.'s the Caille

On the 13th of September, a race for open motor boats was held on the Hackensack River, over a nine-mile course, eighteen boats contesting.

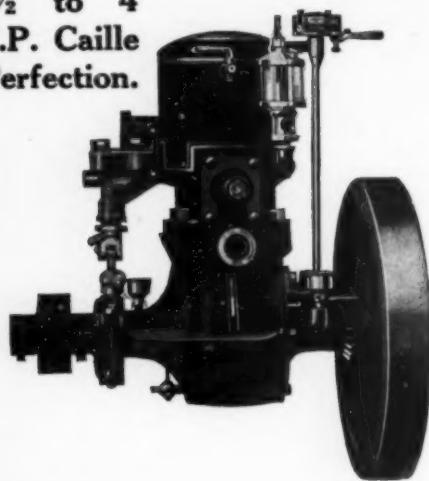
I am delighted to inform you that I have won same, using your make of engine, No. 1151. Any further information I will gladly furnish.

Very truly yours,
STEPHEN GARDELLA,
Department of Police,
Hoboken, N. J.



Power to Spare for Medium Sized Launches

3½ to 4
H.P. Caille
Perfection.



This 3½-4 H. P. Caille is suitable for launches up to 22 feet and for the smaller boats that are built heavy enough to carry this power and stand rough weather. Owners are agreeably surprised at its abundance of power and its capacity for running steadily under hard service conditions.

The power of our engines is honestly and conservatively rated. We would rather an owner have more than enough power than to have too little. It is a common mistake to select too small an engine for a medium sized launch, especially where cost is a factor. As satisfaction with one of these small engines is sure to make nearly every user a customer for one of our larger Caille engines eventually, we believe in the policy of giving the buyer a little more power and engine ability than he expects. We can also furnish this same type of motor in 2 H. P. and 2½ H. P. sizes.

The Utility of the Caille Six

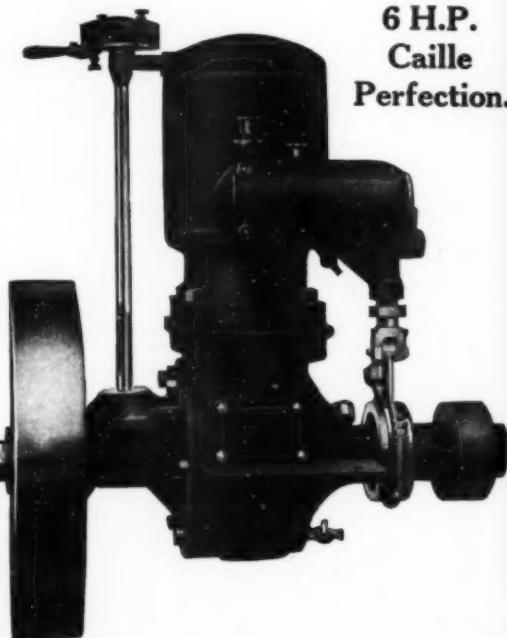
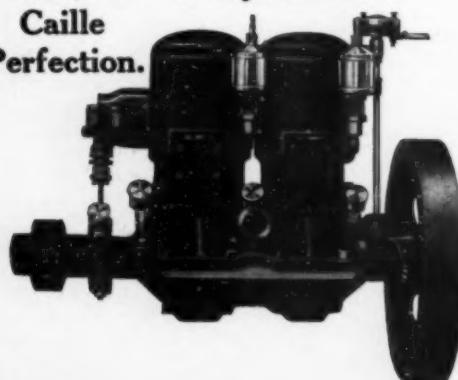
The 6 H. P. Caille Perfection is adapted for launches up to 26 feet, house boats, and as auxiliary power for sailboats. Its size and power make it a great utility for many kinds of marine service—thousands of them are used by fishermen, for instance.

The 6 H. P. will drive a small speed boat at a remarkable rate or equip a working boat or tender for heavy duty service. The power is there no matter what use it is put to.

All Caille engines can be reversed on the spark, and this feature is particularly advantageous in small engines because many boats haven't the room for a reverse gear, and perhaps the owner does not care to add the expense of a gear to the cost of his equipment. The ability to control the boat perfectly under all conditions is invaluable and prevents accidents.

7 to 8 H.P.—2 Cylinders

Caille
Perfection.



6 H.P.
Caille
Perfection.

Would You Pick a Draft Horse for Speed?

The 7-8 H. P. two cylinder Caille is suited to launches up to 26 feet, and is now giving wonderful results in speed boats from 16 to 25 feet. It's the motor to use for medium and light weight boat construction where maximum speed is required.

Every Caille model is designed for a definite purpose, and this one is best described by its contrast with the single cylinder 8 H. P. heavy duty engine. The maximum operating speed is 1000 R. P. M., as against 600 R. P. M. for the heavy duty. The weight is between 25 and 30% less. The power rating is about the same, but one delivers its power like a fast trotter and the other like a heavy draft horse. Would you pick a draft horse for speed? Certainly not. Then, consider the 7-8 H. P. Caille—it embodies the "snap" or "pep" peculiar to the high priced speed motor.

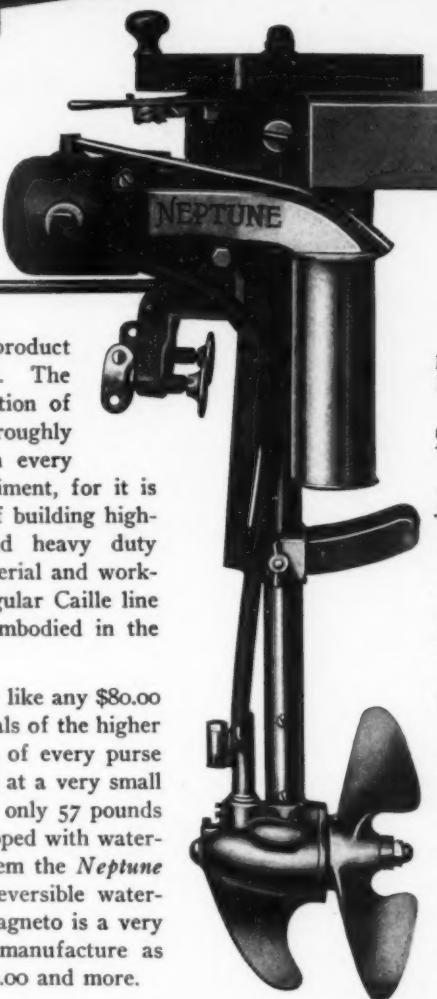
This two cylinder Caille is exceedingly compact, requiring very little floor space. It can be had with or without reverse gear, for of course it can be reversed on the spark if the owner so desires. The flexibility of control is remarkable, throttling from 1000 R. P. M. down to 100 R. P. M. without backfiring, and running perfectly at any speed between these limits.



Neptune Outboard

Here is a standardized American product with the best of Europe added to it. The *Neptune Outboard* represents a collection of exclusive features that have been thoroughly tested out and proven to be right in every detail. The *Neptune* is not an experiment, for it is backed by thirteen years' experience of building high-grade, high-powered unit plants and heavy duty motors. The same fine quality of material and workmanship that has distinguished the regular Caille line motors of the inboard type is also embodied in the *Neptune Outboard*.

The *Neptune* looks and behaves just like any \$80.00 outboard engine. It has all the essentials of the higher priced motor. It brings within range of every purse all the pleasures of motor boating and at a very small cost of upkeep. The *Neptune* weighs only 57 pounds and does not overload the boat. Equipped with waterproofed coil and battery ignition system the *Neptune* costs just \$50. With high tension reversible waterproof magneto, \$60. The *Neptune* magneto is a very efficient one and costs as much to manufacture as the magnetos on motors selling at \$80.00 and more.



\$50

Just look these features over and then compare the *Neptune* with any other outboard machine on the market irrespective of price.

Gasoline tank holds enough fuel for five hours. Oil is mixed with gasoline taking care of lubrication. Tank well built with double seamed edges and reinforced with brass supports.

Brass filler cap on fuel tank is lined with a tin cup. This cup filled six times with oil gives correct mixture with gasoline for lubricating entire motor.

Shut-off cock in gasoline line prevents leakage when motor is not in use.

A simple turn of the fly-wheel to the right starts the motor. To reverse, turn fly-wheel in opposite direction.

This motor is cooled by water pumped from the lake or stream itself and circulated around cylinder. Pump is combined with motor and needs no attention.

Cut-out button controls the motor. Just press button and the engine stops. This exclusive feature only found on other motors selling at \$80.00 and more.

Combined tiller and steering handle make steering possible from any part of boat. This means better weight distribution when riding alone, and greater convenience at all times.

Heavy frame clamps motor to boat. Adjustable to any angle of boat's stern. Attached in one minute.

Neptune bronze propeller obviates use of rudder. Turns freely in either direction and will turn boat within its own length. Wedgeless type—can be operated in very shallow stream.

Bronze strut protects propeller from damage in beaching or in shallow water.

Caille's Neptune Silencer conceded to be the most efficient exhaust muffler yet devised. Cannot be heard 10 feet from shore. Does not check power of motor nor speed of boat.

Neptune Specifications

SPEED AND POWER: The motor embodies the snap and ginger that makes you feel glad you bought it. Rated at 2 H.P.—900 R.P.M. Under actual boat test it develops 2.2 H.P. or an average of 8½ miles per hour.

CYLINDER: Cast from close-grain grey iron—same as used for automobile engines. Cylinders are rough bored and ground smooth, giving a straight, accurate cylinder bore. Cylinder is entirely surrounded by a water jacket and tested by hydraulic water pressure.

PISTON: Made of the same close-grain grey iron and ground with great accuracy. Baffle plates at the top of the piston insure maximum power at high speed.

PISTON RINGS: Piston rings are made eccentric and cast individually, retaining the strength given them when the iron is chilled in casting. Wrist pin is high grade carbon steel, hardened and accurately ground and is hollow to provide for oiling.

CRANK SHAFT: Made of high grade 35 to 40 point carbon steel used in the finest automobile crank shafts.

CONNECTING ROD: Special wear resisting phosphor bronze I-beam in shape.

CRANK CASE: Made of phosphor bronze, the bearings are cast integral; these are machined to fit crank shaft perfectly.

TIMER: Timer located underneath fly-wheel, convenient to operator. A movement one way or the other controls the speed of the motor. Timer consists of a vibrating spring, actuated by cam on the fly-wheel. Contact screw and vibrating spring equipped with large tungsten points which cannot corrode or stick. Points can be quickly adjusted by means of the contact screw. The cam gives the proper make and break for the timer, giving batteries long life.

FLYWHEEL: Flywheel is perfectly balanced and heavy enough to allow the engine to run very slowly.

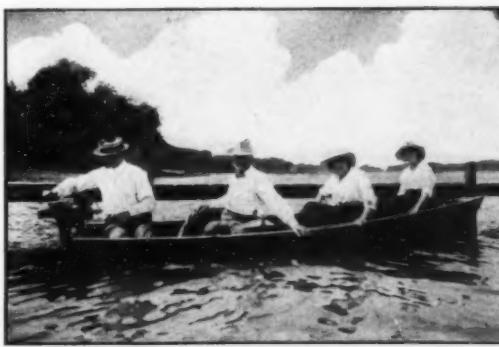
CARBURETOR: Designed with the greatest care. Automatic generator type, small and simple. It gives the proper mixture at all times.

PROPELLER: The propeller is manganese bronze which is proof against salt water corrosion. It is 9½ in. in diameter.

GEAR HOUSING: Gear housing is phosphor bronze and impervious to salt water corrosion. It houses the propeller gears in a water tight chamber. It is packed with enough grease to provide lubrication for several months. A thrust is provided for the propeller.

WATER PUMP: Water pump is attached to the gear housing. It is of the plunger type, and driven by a cam on the propeller shaft. Its capacity is ample to keep cylinder cool on the hottest days.

We Furnish The Neptune In Both 2 H. P. and 3½ H. P. Sizes



A Single Turn of the Fly-Wheel Starts the Neptune—Speed 8 Miles Per Hour.

Packed in a Trunk a Great Convenience

In July I took my Outboard motor to northern Wisconsin on a fishing trip, the motor being packed in a steamer trunk along with the rest of my outfit. The motor was put on a sixteen foot boat of heavy construction and drove the boat every day for two weeks without a skip. Many of the resort guests were inclined to make light of the motor when I put it on the boat, and cracked all kinds of jokes, as there were two other Outboards at the resort of another make, and it took a half day to get each of them going, but I knew my motor, put in oil and gas, loaded the boat, gave the fly-wheel a turn and away she went.

I want to say that the motor gave me a great deal of pleasure and absolutely no trouble of any kind, and saved the guide many a long mile pull. There is a good market for these motors in Wisconsin, as the guides are all very taken with them. You could arrange with resort owners for agencies and they could sell them to their guides.

Very truly yours,
C. W. Bandy,
Palmer National Bank
Danville, Ill.



How We Co-operate With Our Customers

BOAT BUILDERS' DIRECTORY -- A NEW CAILLE FEATURE

If you are considering a new boat, or contemplating the building of one, you are eligible for this free service, the chief idea of which is to save you money

No matter what style, type, design or size of boat you have in mind, we can help you locate the right man to build it—a man in your own locality—a man whose ideas, training and experience are deserving of your first attention. Incidentally, we can help you to save considerable money on the price of the boat.

At some expense we have compiled the complete Caille's National Boat Builders' Directory—the only record of its kind in existence. This directory gives the name and pedigree of the representative and reliable boat builders in every State—men who have achieved fame by the winners they have designed, constructed, launched and sailed. Mr. Eli Townsend—the designer and builder of "Silver Heels," described on another page of this advertisement—is one of the representative men listed in Caille's National Boat Builders' Directory.

How The Directory Works

It makes no difference whether you live in Maine or California, the Boat Builders' Directory is made to serve you. It assures you that your boat will be designed from scientifically correct principles and blue prints—that it will be well and carefully built—that the material is of the proper kind and of the right quality—that the hull will be sea-worthy and safe. In short, the Directory gives you the same confidence in the boat builder that one gains, for instance, upon looking up the financial standing of a certain firm in Bradstreet's and finding the rating to be O.K. The value of the Directory service cannot be over-estimated—if you are interested in the Directory, just make a notation on the coupon on the last page of this advertisement, and we will give you full particulars. The service is free.

Pullman Car Official Pays Tribute to Caille

I have just returned from a particularly pleasant fishing trip in the Northern woods and aside from the fish that I caught (and the big ones that got away), the thing that gave me the most pleasure was the operation of the Caille motor.

I want to thank you for your kind attention in this matter and express my entire satisfaction with the equipment.

Very truly yours,
E. C. MORRIS
The Pullman Company,
Chicago.



This Boat Has Made Three Different 500-Mile Cruises—
Equipped with a 4 H.P. Caille.

Second-Hand Caille Still On the Job

I want to tell you that I have one of your engines in my boat now and I like it very much. It is 3 1/4-4 H.P. Caille Perfection and runs like a top. I have had it three years and I bought it second-hand, so I do not really know how old it is, but it is in pretty good shape at that.

Now, I have a boat which is only 18 ft. long and 4 ft. 2 1/2" beam. My Caille motor runs this boat eight miles an hour in all kinds of weather. I have driven her in some pretty rough and rainy weather and have had the sea break on the bow and strike the engine, but it never failed to "Putt" and it never stopped once. I like this machine very much and if I should get another it would be a Caille.

How much is the 8 H.P. 2-cylinder engine? The one that was advertised in the SATURDAY EVENING POST.

Very truly yours,
CHARLES A. STRICKLAND,
47 High St.,
Bronx, N. Y.



The Dealer's Cue For 1915

GREATER ENGINE VALUE BACKED BY JUDICIOUS ADVERTISING

Here is a machine you can sell with the confidence and certainty that the sale does not entail a burden of attention and subsequent cost

The Opening Gun--Bang!

Here's the *largest marine engine advertisement ever published*—it's the opening gun of our big publicity campaign for 1915. Live Dealers will recall the Caille advertising plan during the past year, which, in volume of space used and number of publications was the greatest campaign ever promoted in the history of marine motor merchandising—it was the *greatest* not only because of its size and its cost, but *greatest* because of the remarkable results obtained. *Are you going to get the benefit of our 1915 advertising expenditure? You are if you act quick.*

Co-operative Sales Work

This 16-page advertisement in both "Motor Boating" and "Motor Boat" is a sample of our co-operative sales work—there are numerous others. Our 1915 Dealer's Co-operative Plan has been completed. Just mail the coupon, and full particulars will be sent you immediately. Active buying is bound to follow this announcement in your territory—quick action will enable you to handle this business. Last season our advertising in seventy national publications kept the Caille motor constantly in front of forty million readers. Have you any idea how many prospective buyers that advertising converted into Caille owners?

Ten Thousand Buyers

We sold over 10,000 Caille motors through our 1914 advertising alone—we will do even better for the coming year. We are offering greater engine value backed by real judicious publicity. Now we are going to get the business that is to be had in your territory; furthermore, we are going to select a dealer who will help us to get it. Your prompt use of the coupon on the last page of this advertisement will bring your application to the immediate consideration of our Sales Manager, who is now completing the assignment of all territories and agencies for 1915. Next year means a greater, bigger and better business for the entire Caille line. This is your opportunity—strike while the iron is hot.

CAILLE DEALERS BRING HOME THE "KALE"

Quick to Start; Best Engine Made

I have run my engine and she went all right every time. I went fifty miles the first run. It is just fine; my boat rides so much better. It goes as easy as anything can go and I am more than pleased with my outfit. My boat goes very much faster with this engine than the other make. Your company just puts out the best engine that is made. Now, I am not a boat man in any way. On Sunday morning, there were lots of men watching to see how long it would take me to get her started; well, it was just a few minutes from the time I got my boat in the water and I was going down the river. Well, they all said that was the best start for a new engine that ever was in this river. Some record, wasn't it?

Respectfully yours,

JOHN F. THORN,
Brunswick, Me.



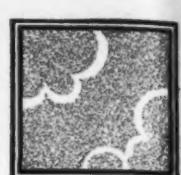
The 4 H.P. Caille Perfection on the Job at Victoria, British Columbia.

Wouldn't Sell Caille If He Couldn't Get Another

I would like to have the price and catalog of your engines from one horse up to four. There is a fellow wants to buy my engine, but I like it myself and wouldn't sell it for any money. If I thought I couldn't get another Caille.

What are the prices of your engines with the new ignition? Maybe I could sell him a new one. I don't care about selling mine because she is working so nice. She won't run any time no bother. There are four other motor boats on the lake and they are out of order half the time. I enclose a stamp for a reply as soon as possible, please.

Yours truly,
FRANK A. CORR,
Care of Mirimichi Poultry Farm,
Foxboro, Mass.

CHARLES J. RAMONET
Paris, FranceJOH. SVENSON
Stockholm, SwedenVINCENZO SCHIAPPA-
CASSE
Genoa, ItalyADOLFO ZOHRRER
Guayaquil, EcuadorJOHS. OTTESEN
Molde, Norway**Twelve Miles Per Hour With a Caille**

I have just launched my pleasure boat "Louise," which has a 51 in. beam, 18 ft. long. It is propelled by one of your two cylinder 7-8 H.P. motors. Under ordinary conditions I can make 12 miles per hour. Did do this on trial run. Everybody that sees this motor is well pleased with it.

I think I will get an order soon for one of your four cylinder motors of the same bore and stroke.

Am sending you a snapshot of my boat, made on trial trip. Yours truly,
Erwin, Miss. JOHN F. ROSS,
Have sold the above boat and the purchaser is well pleased.

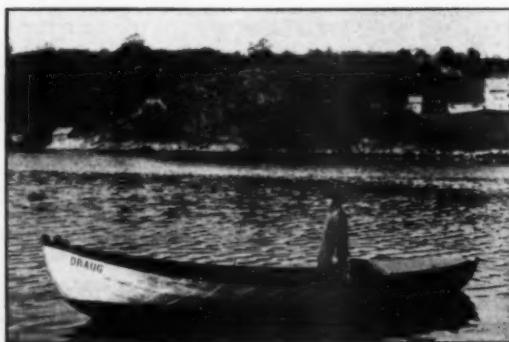
Here Are Ten Caille Dealers Who Achieved Success Abroad

Out of a total of 127 foreign Caille dealers we have picked a representative group of ten. Some of these men have made greater successes than others—the extent of any dealer's success depends on the territory, and the length of time he has been established. These ten men are an average ten—but their achievements have not been of an average quality. On the contrary, they have secured exceptional results, and they are all looking forward to greater and better returns from their efforts in 1915.

Aside from the advantage of owning an established business, the chief reason for the success of these ten men is the service that they have extended to the foreign buyer and their persistence in acting in conjunction with the other 117 foreign Caille representatives in the broadening and improving of the service. The foreign Caille buyer enjoys the same individual service today that is extended to the domestic buyer here in the United States. It is because of the missionary service work originally mapped out by these ten Caille dealers, that we now introduce them to you—high calibre business men—the kind of men we like to have as representatives.

The Foreign Opportunity

The opportunity abroad for the handling of Caille Perfection Engines is open for the consideration of fifty business men. We particularly solicit the attention of American Consuls who are in a position to select representatives. Correspondence is invited—full particulars of our Foreign Sales Plan gladly mailed on request.



"Draug" Owned by the Norwegian Caille Representative,
Helje Valvatne, Powered With 4 H.P. Caille.
This Boat Makes 7 Miles Per Hour.

A Difficult Trip, But Caille Made It

Your agent at Klinger Lake tried out the motor this week and is delighted with it and has several prospective purchasers.

The motor is a little wonder and never fails. Last week we made a trip through a mile-and-a-half creek between Klinger and Tamarack Lakes, a difficult trip and never made with motor before. You may quote me if you desire any recommendations.

N. J. MILLER,
Klinger Lake, Mich.



Caille Factory Department Heads, Shop Foremen and Service Division Snapped During the Noon Lunch Hour.

The Keynote of Caille Success is Service Profits From Service

Woodrow Wilson says, "Profits are legitimate only when they come from service." When you purchase a Caille motor, you are in reality buying a service and the engine is merely the vehicle or means to securing it. *Mileage*, for that is what we mean by marine engine service, is the governing factor that will persuade you in the final analysis which engine to buy. The mileage of every Caille Perfection is guaranteed, and so is the horsepower rating. We suggest that you base your judgment on the past performances of Caille machines. Results count, and it is results that you are chiefly interested in, not claims.

Human Material First

To build a machine of merit—a motor that will give real service—it is essential that the human element in one's factory be of the highest type. Employes of The Caille Perfection Motor Company are picked individuals. They are chosen for native intelligence, training, experience and skill. Located here in the heart of Detroit's "Automobile Zone," we have no difficulty in securing expert workmen, in fact, our employes represent the pick of the engine trade. To be chosen for this organization is in itself a certain rating of a man's ability, and is so regarded in Detroit. Behind this organization lies the unchanging ideal of Caille Service.

Time Tried, Storm Tested

Just a few lines to say that all the Caille motors in my territory are doing excellent work. The motor I used last year is even better than when I got it, and burns low test kerosene through the carburetor without the least trouble. I have never used gasoline except occasionally for the priming cup. A few spoonfuls once in a while is all that is necessary.

The Caille works steadily towing heavy boats in all kinds of weather and going on all occasions. I say once for all that there is nothing on the firing line that beats your patent igniter and 8 H.P. heavy duty engines. People look aghast to see the work that boat will do and are always amazed to see what it can do. Last summer I ran her with a load of fish in a storm where the boat was actually buried with water, when it was a case of "Do or Die" as the fishermen often say. We could scarcely see the engine for water and kept bailing the water in front of the engine which was nearly half up to the fly-wheel, when a less capable motor would have stopped and meant death to myself and six others. This boat is 31 ft. long, the "Tomy" and is a large boat, 22 feet long. Her speed is about seven miles an hour. I thought you would like to have this information for other customers.

Wishing you every success, I am,

Yours truly,

MORSE COLLINS
Indian Island, Newfoundland.

There is another phase of Caille Service. It is that personal contact or relation between the Caille dealer and the customer, and the Caille dealer and ourselves. It's co-operation—personal service plus. It extends throughout our entire plant and system of dealers—nine hundred warehouse dealers who cater to your individual requirements, carry parts in stock and are in constant touch with the factory. You will never be prevented from using your motor for want of a part. Twenty-four hour service is the rule.

The Customer's Satisfaction

Our Service Department is chiefly concerned in your satisfaction, for we figure that the satisfied customer is our best advertisement and business asset. Again and again it has been demonstrated that the business grows only as the wishes of the individual customer are properly understood and met. The customer's very rejections and objections are full of possibilities for growth. Employes are encouraged to study demand and establish cordial relations with the customer. Close attention to details, orders, shipping instructions, telegrams, etc., all constitute service. The purpose of this business is to give better and better merchandise; to sell at the most reasonable prices; to give customers value and satisfaction at all costs.

Reserve Speed When Required

I started from St. Leonards with my 18-ft. boat and one of your 4 H.P. "Perfection" engines and drove it to Princes Bridge in Melbourne in 5½ hours, without a stop, averaging 6 miles per hour.

As this boat is a 6-ft. 10-in. beam, I consider this an excellent performance, and I am satisfied I could have got another mile an hour, if I had so wished.

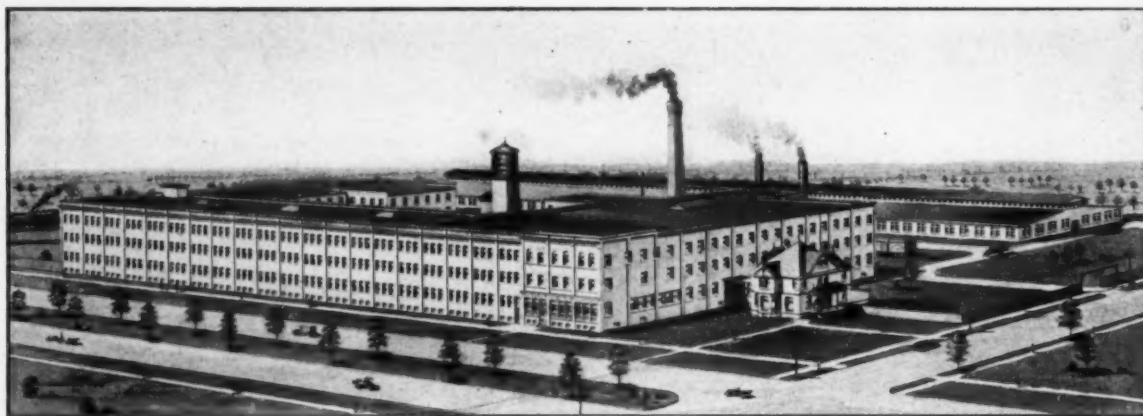
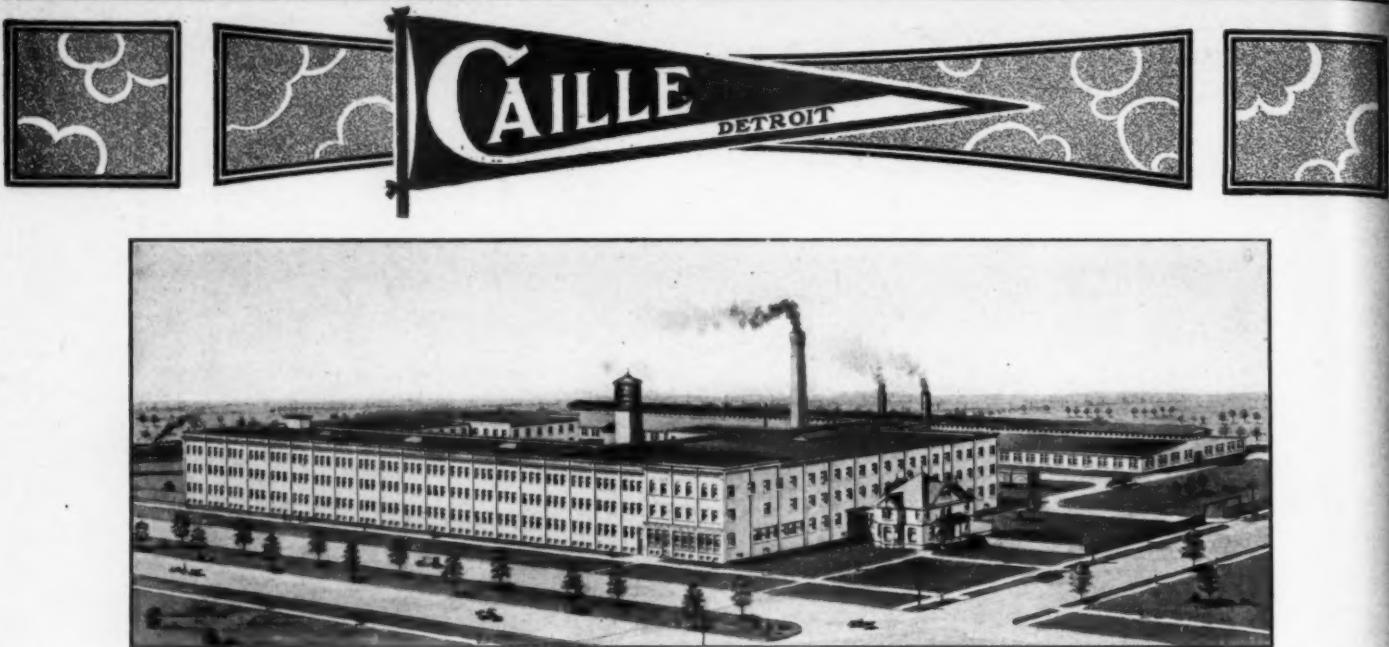
Wishing you every success with your engines.

Yours faithfully,

W. HOLDEN,
St. Leonards,
Australia.



"Kushquan," Owned by John Davis, Esq., of Metlakahtla, Alaska—Length 31 Ft., Beam 7 Ft.—Powered With Caille 8 H.P. Unit Plant.



The Caille Factory Represents An Investment of Over a Half-Million Dollars.

Write Your Own Guarantee

That's just what we mean—and we mean every word of it. Take your pen in hand, write your own kind of a guarantee, and we will abide by it to the letter. We want you to have the same faith in us that we have in you. We want you to put your confidence in the Caille Perfection motor as thousands of others have done. Our guarantee has always been a positive one and we have backed it up with our Guarantee Bond, but if it will more readily persuade you that our motors are right, if you are given the privilege of writing your own guarantee then most assuredly, we will extend that privilege. But, keep in mind that we are not

only the originators of "write your own guarantee," but the only firm advocating it.

Send For The
Caille
Blue
Book

1915 CAILLE

1456 The Caille St., Perfection Motor, Motor, U. S. A.
Gentlemen—Please send me a free copy of your latest
Marine—Motor Blue Book by return mail.
I would like special information about
Name _____
Address _____
City _____
State _____



COUPON

We Printed A
Copy For You

**The Caille Perfection
Motor Company**

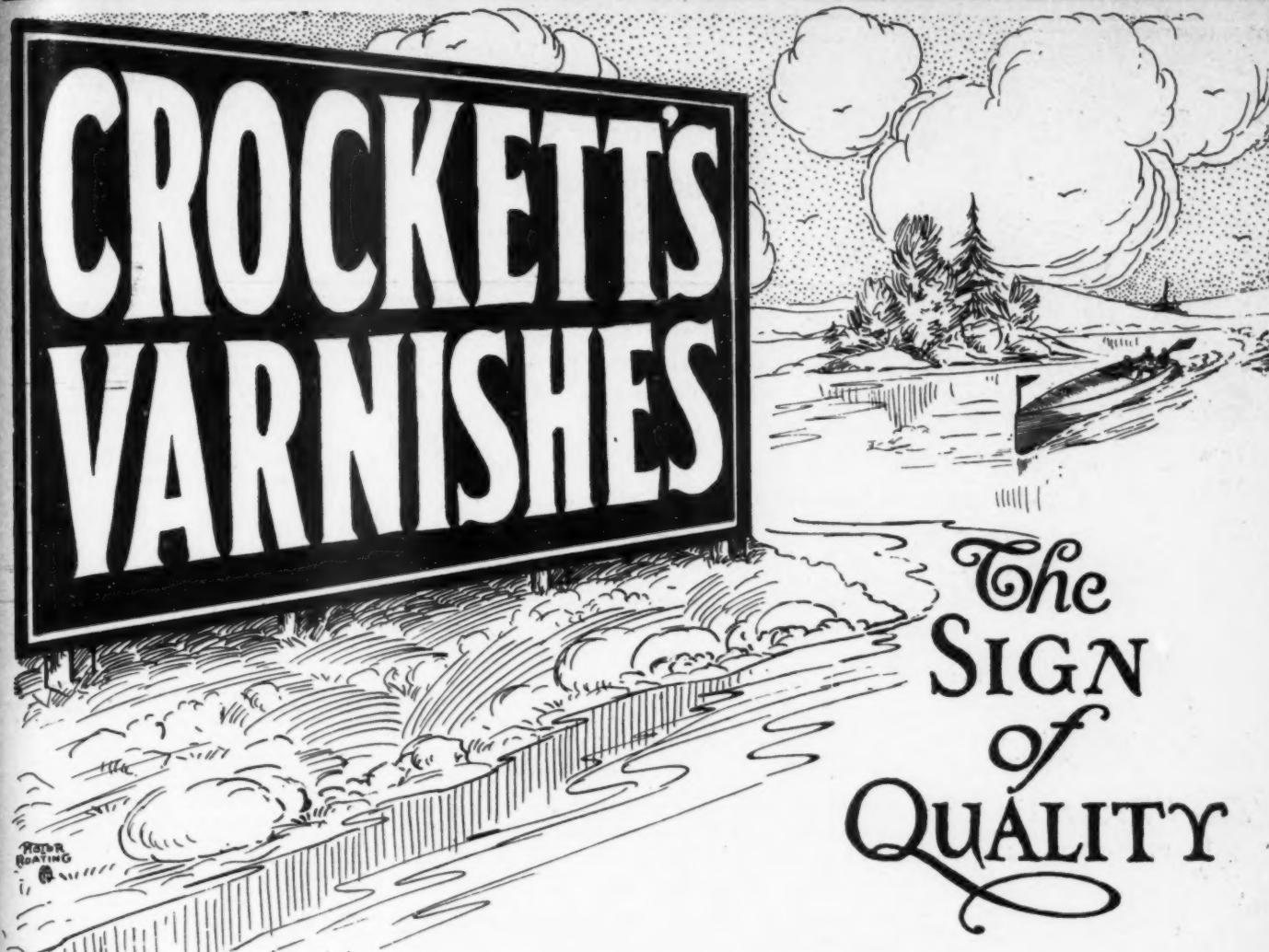
*World's Largest Builders of
Two-Cycle Marine Motors.*

1456 Caille Street, Detroit, Michigan, U.S.A.

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Crockett's Spar Composition

The best known and most durable marine varnish in the world. The acknowledged standard with ship, yacht and motor boat builders. Positively salt and fresh water proof, it has no equal for exterior marine use or outdoor work of any kind. The deep brilliant lustre is not affected by the severest exposure. It will not spot, crack, blister or scale and cannot turn white.

Crockett's No. 1 Preservative

The best interior finish that brains and experience can produce for use on steamships, yachts and motor boats. Less liable to mar or scratch than any finish known. Is not affected by the use of hot water and soap. Can be rubbed and polished, or left with an egg-shell gloss.

Crockett's Waterproof Floor Finish

The only reliable finish to use on the floors of yachts and motor boats. Heel marks do not show white on it. Can be washed with hot water and soap, the only way to keep a floor clean.

Send for Booklet "WHAT TO USE AND HOW TO USE IT."



David B. Crockett

THE DAVID B. CROCKETT CO.
VARNISH MAKERS
BRIDGEPORT, CONN.



Rewiring every year should not be necessary

The boat builder should equip with cable that will resist oil, heat and water.

The wiring job should be so well done that rewiring is unnecessary—and it will not be necessary if your boat is wired with

Packard

Protected Cable

Also, there is the satisfaction of knowing that you will get dependable service—that your safety, comfort and pleasure are assured—that you will have little or no electrical trouble providing dynamo, batteries, etc., are given proper attention.

The "Protection" is built into the cable and consists of a flexible enamel—applied to each conductor and to the completed cable. The rubber thus has its two braids plus a flexible covering which protects it against its worst enemies—oil and heat.

The enamel is a substance unlike anything you ever saw—elastic and "rubbery" in appearance, but not like rubber when subjected to oil or grease.

When applied it is of very light consistency, filling and closing every pore, successive coats being added until the rubber is sealed with an oil-proof covering—a kind of elastic "skin" which in no way injures the rubber or affects the cable's flexibility.

The enamel also provides additional insulation. Complete assemblies for motor boats made on special order, also cables of any specified construction.

Write for descriptive folder showing standard products in actual sizes and natural colors.

The Packard Electric Co.

Dept. O.

Warren, Ohio



Combination High Tension Cable

106

PROFITABLE ADVERTISING

consists in placing your selling message before the greatest number of possible buyers. MOTOR Boating has the largest guaranteed circulation in the marine field, reaching boat owners exclusively and of a class who can afford to buy what you want to sell. Write for rates and information.

Dependable Fittings

Whistle outfits, Mufflers, Muffler Cut-outs, Filters, Fog bells, Stair locks, Combination flag pole and electric aft lights, Spark, throttle and reverse controls, etc. Ask for Catalog B-5.

GRAY-HAWLEY MFG. CO., 937 Jeff. Ave., Detroit

Set up Your Own Boat



Great Lakes' Sections enable you to build a finished boat at 1-1/2 the cost of a finished boat. Every section numbered and guaranteed to fit perfectly. Only finest grade lumber used. All boats designed by an experienced naval architect. Write today for Special Low Price on boat you want.

Great Lakes Boat & Pattern Co.
Pier 21
Milwaukee, Wis.



Be Fair to Your Motor

Give it a chance to make good, to last long, by giving it perfect lubrication.

USE LUBROLEINE MOTOR OILS

"MAKE MOTORS MAKE GOOD"

Write today for full information and proof that Lubroline will give you better motor service. Ask for booklet "Make Motors Make Good."

Fiske Brothers Refining Co.
Established 1878.
New York
Pittsburg
Newark



\$19.00
with seat only
\$20.00
with seat and cover

We built this Motor-Boat Water Closet after carefully considering the designs and requirements of small cruising boats and the demand for a low-priced fixture, suitable for above or below waterline use. When installed above the waterline it only requires a sea-valve on suction pipe. Its simplicity and ease of installation enable anyone to install it. Pacific Coast Agents: McCaffrey Bros. Co., San Diego, Cal. Maloy-Blanchard Co., San Pedro, Cal. Sunde & Erland, Seattle, Wash. Shea Sales Co., Montreal, Canada. Gas Power & Supply Co., Portland, Ore. Marine Engine & Supply Co., Los Angeles, Cal. Canadian Fairbanks-Morse Co., Montreal, Canada.

Manufactured solely by

The J. H. Curtiss Co., 2 South Street, N. Y.

2 to 6
Cyls

BLOUNT

ENGINES

12-70
H. P.

Built for the man who wants the best
BLOUNT ENGINEERING COMPANY
100 HIGH STREET
BOSTON, MASS.



ELECTRIC SEARCHLIGHTS

We make searchlights in sizes from 7 in. to 60 in. diameter, suitable for small launches and yachts and for the largest battleships. Send for Catalog A.

THE CARLISLE & FINCH CO.
261 E. Clifton Ave., Cincinnati, Ohio

STORAGE BATTERIES

	L	W	H		
5-60	Sparking Battery	5	7 3/4	9 1/2	\$7.49
5-80	Lighting Battery	6 3/4	7 3/4	9 1/2	8.99
5-150	Lighting Battery	12	7 3/4	9 1/2	14.99
S-150	Starting Battery	12	7 3/4	9	18.99
				Quality Guaranteed. Order direct.	

BRESLER-WALLACE SALES CO.
1031 Dime Bank Building
DETROIT, MICH.

AUTO CRAFT Bargain

We offer a limited number of our famous 18 ft. Auto Craft Special Launches, built to sell at \$200.00, for \$158.50 WITH MOTOR \$85.50 WITHOUT MOTOR

Write to-day for complete details and catalog.

The Cleveland Auto Boat Mfg. Co., 1037 River Ave., Cleveland, Ohio.

I Teach Naval Architecture.

Marine drafting, Motor boat, Yacht, and vessel designing by Correspondence. If you want to learn how to design successful boats, or to improve your knowledge of designing let me instruct you. Guaranteed, understandable individual instruction and training. Very moderate charges. Write now for catalog.

C. H. DESMOND, Naval Architect
ELIZABETH, N. J., U. S. A.

FIND OUT ABOUT THIS

A complete electric lighting outfit with Golden Glow Searchlight ready to install on your boat for only \$15. Ask for our complete booklet describing the wonderful "Golden Glow" lamps and Esterline electric starting and lighting systems for motor boats.

THE ESTERLINE CO., 283 E. South St., Indianapolis, Ind.

Marine Engines

to operate on Gasoline, Kerosene or Heavy Oil

What are your requirements?

FAIRBANKS, MORSE & CO.

Chicago New York San Francisco

1315-30A

Bulb Shank Mooring Anchor

Your boat can't get away. The bulb shank makes it lie flat, but raises enough to ease off sudden strains. Head won't ball up with mud. Eye for trip line makes easy to raise at end of season. Write today for our free "Mooring Book."

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The Bosch Magneto Is The Ignition System For ALL Motorboats

PRACTICALLY every high grade motorboat engine is fitted with a Bosch Magneto; but some motorboat engines are made mainly to sell at a low price, which often leads to the engine being fitted with a cheap ignition system, one depending upon batteries, which at their best are liable to total destruction by salt air or dampness and therefore are by no means dependable.

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Pay a little more for your engine if you must, but have it Bosch-Equipt. Practically every prominent motorboat of 1914 used a Bosch Magneto and Bosch Plugs--they gave service.

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KNOX MARINE MOTORS

MOTOR BOATING

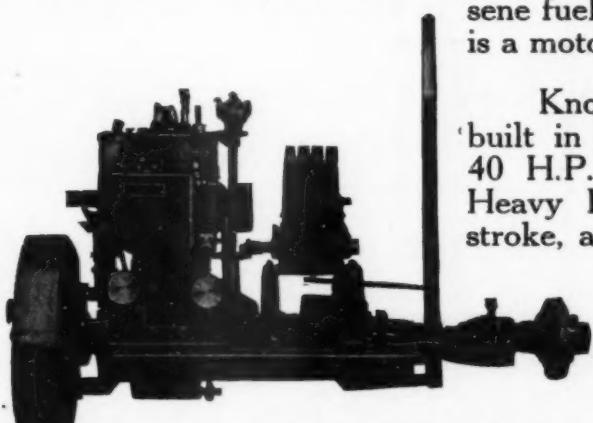
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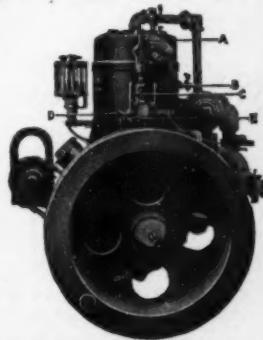
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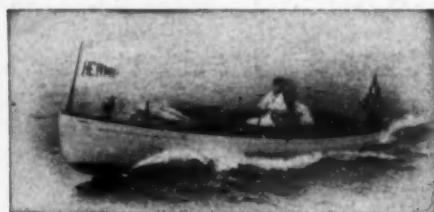
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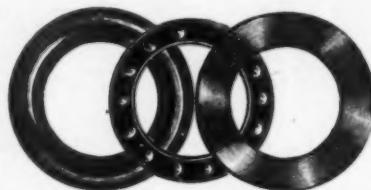
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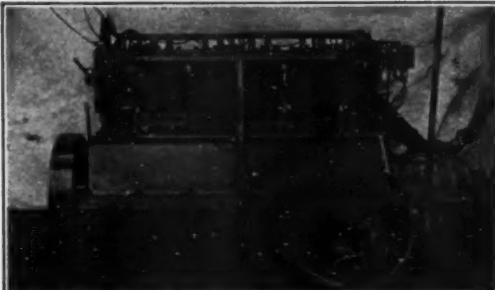
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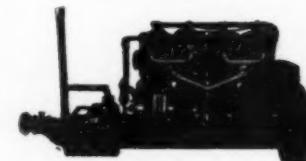
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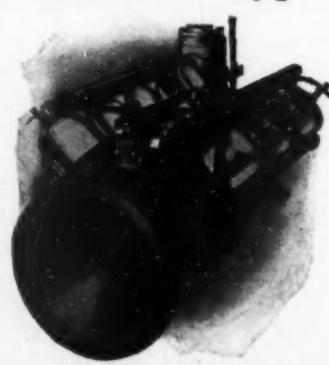
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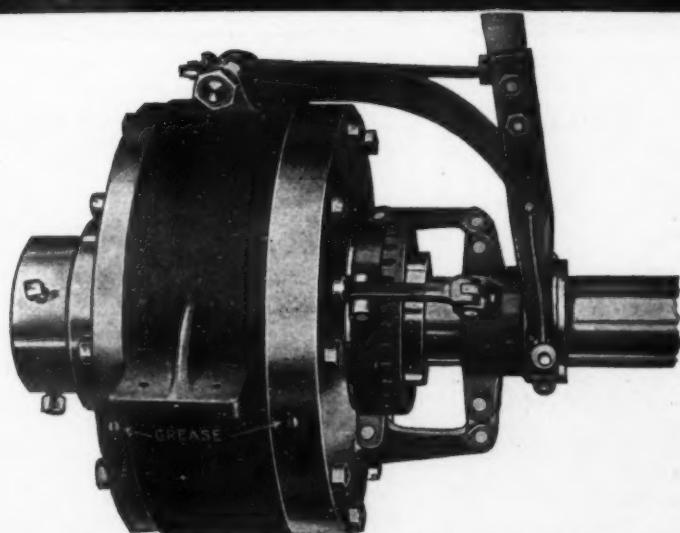
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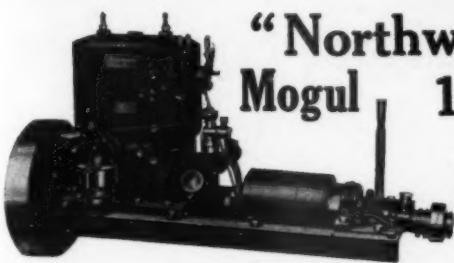
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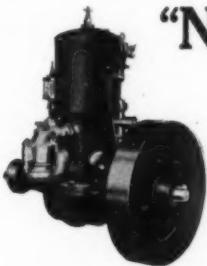
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Line

Single Cylinder Engines
Highest Grade
Medium Weight
Medium Speed
Moderate Price

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4 H.P.

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Row Boat
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High Speed
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With the high cost of fuel this is one of the most valuable inventions applied to motor boat engines for years. It is a wonderful saving in the consumption of fuel. The crank case bearings are equipped with a soft textile graphite packing rings, which allows main bearings to be run looser, thus obviating friction and saving of compression. Because of this feature the Northwestern engines are run longer and give more power on the same quantity of gasoline than any other engine in existence.

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A rotary hand bilge pump that works faster and easier, and lasts longer without wear, than any other type. Works without priming. Three sizes which pump 6 to 20 gal. at 85 R. P. M.

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18 ft. Runabout	\$78
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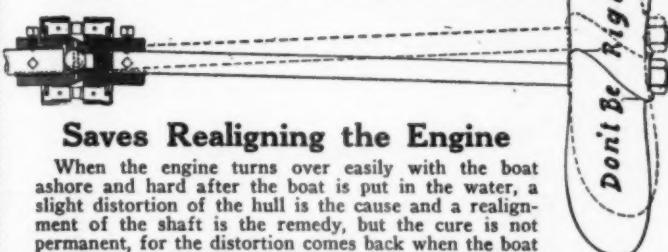
Special need of flexibility in all Motor Boats

In the very nature of things, a motor boat does not provide a substantial foundation for an engine. The engine or reverse-gear shaft and propeller shaft are therefore seldom in line. Francke Flexible Couplings make shafts that are out of line run just as well as shafts that are in line. Requiring no thrust bearings to protect them, they save the cost of a thrust bearing; they save the expense of accurate alignment of shafts; they save the trouble caused by shafts getting out of line; they save gasoline. They make the boat go faster.

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When going "ahead" the thrust is transmitted by the propeller shaft, through the central bolt, without putting any strain on the flexible pins. When going "astern" the central bolt takes the pull of the propeller.

Install It Just Like a Rigid Coupling



Saves Realigning the Engine

When the engine turns over easily with the boat ashore and hard after the boat is put in the water, a slight distortion of the hull is the cause and a realignment of the shaft is the remedy, but the cure is not permanent, for the distortion comes back when the boat is running and keeps increasing the faster she runs. This distortion is the cause of slower speed, hot engine and reverse gear bearings and leaky stuffing boxes, and the only permanent cure is a flexible coupling.

Prominent Naval Architects, Engine and Boat Builders use FRANCKE FLEXIBLE COUPLINGS. Any Builder can furnish them with your engine or boat.

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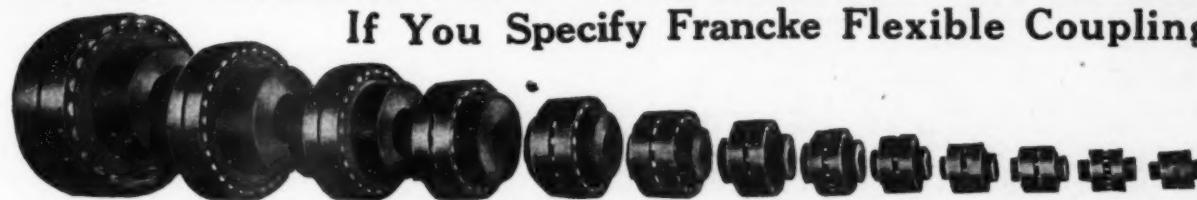
420-424 East 106th St., New York City.
December 29th, 1913.
THE SMITH-SERRELL COMPANY, Inc.,
90 West Street, City.

Gentlemen:

In reply to yours of the 26th inst., am pleased to report that the FRANCKE flexible coupling you sold me in June of this year, was installed on my propeller shaft, between the clutch and the inside stuffing box, which coupling almost totally occupied the available space. Notwithstanding the sharp angle which was caused by bad alignment between the clutch and the inside stuffing box, my engine turned over nearly 20% faster after your flexible coupling corrected this bad alignment; has given me no trouble whatever, and in all ways has been perfectly satisfactory.

Yours very truly,
(Signed) WM. A. SCHOLEY.

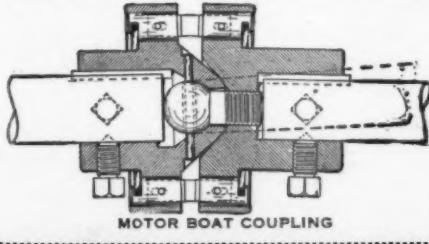
MORE SPEED—NO BEARING TROUBLE If You Specify Francke Flexible Couplings



TO SELECT YOUR SIZE choose the SMALLEST coupling big enough for your LARGEST shaft end, then check from horsepower table to BE SURE that this coupling has POWER ENOUGH for your engine. If power enough is not provided by this coupling, select the next larger coupling listing power enough for your engine.
IN ORDERING give shaft sizes and keyways wanted at both ends, horsepower and revolutions.

STANDARD CAST IRON MOTOR BOAT TYPE FRANCKE FLEXIBLE COUPLINGS

Size No.	Either End can be any shaft size between these limits	Other End Can be any shaft size between these limits	Out Dia. Inches	Length Over All Inches	Net Wt. Lbs.	HORSEPOWER THE COUPLING WILL CARRY AT VARIOUS REVOLUTIONS								Net Price F.O.B. New Brunswick, N. J.
						300	400	500	600	700	800	900	1000	
3½	¾ to 3½"	Up to ¾"	3½	5½	7½	3	4	5	6	7	8	9	10	\$6.75
3½A	¾ to ¾"	" " ¾	3½	5½	8	4	5½	6½	8	9½	10½	12	13½	8.10
4	¾ to 1½"	" " 1½	4	6	11	6	8	10	12	14	16	18	20	9.90
4½	1½ to 1½"	" " 1½	4½	6½	14	8½	11	13½	16½	19½	22	24½	27½	11.70
5	1½ to 1½"	" " 1½	5	6½	18	11½	15	18½	22½	26½	30	33½	37½	13.50
6	1½ to 1½"	" " 1½	6	7½	25	13½	18	22½	27	31½	36	40½	45	16.20
6A	1½ to 1½"	" " 1½	6	7½	26	18	24	30	36	42	48	54	60	18.90
7	1½ to 2	" " 2	7	7½	33	27	36	45	54	63	72	81	90	22.50
8½	2 to 2½"	" " 2½"	8½	10½	65	84	112	140	168	Stock Shipments				31.50
10	2½ to 3	" " 3	10	12	100	195	260	325	390	From Our Factory				40.50
12	2½ to 4	" " 4	12	14½	150	270	360	450	540	at New Brunswick, N. J.				54.00



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General Sales Agent for THE FRANCKE CO.

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Also
Lightweight
Steel Hydro-
plane Couplings

Prime Your Engine With Prest-O-Lite

Means quick unfailing starts of the
coldest motor in zero weather

"Frozen engines" start without fail on two or three slow, easy turns, even in zero weather, when primed with acetylene through the intake manifold.

The Prest-O-Primer uses a "thin mixture" of acetylene at low pressure, and has the same effect on the engine as a "thin" gasoline mixture; but with the difference that, being a ready-made gas, the acetylene fires unfailingly regardless of intense cold.

The Prest-O-Primer is easily and quickly installed on any motor, and makes hand cranking or the use of a "rear starter" so easy, quick and positive that you need no more complicated mechanism. Works from the same Prest-O-Lite that you use for lighting.

Prest-O-Lite for Lighting

is thoroughly efficient, safe and economical under all marine conditions—the only satisfactory system for boats.

Write for complete information on Prest-O-Lite for starting and lighting.

The Prest-O-Lite Company, Inc.
260 Speedway Indianapolis, Indiana

Sell Your Old Engine in the Market Place

Motor Boating's Market Place columns offer the buyer and seller of used motor boats, fittings, etc., a quick and convenient medium of exchange.

If you are getting a new boat or a new engine, and wish to sell the old one, don't have it rotting, or rusting or collecting storage charges—sell it—in the Market Place.

Perhaps you have waterfront property suitable for a yacht club, or for individual yachting enthusiasts—the Market Place goes to over 25,000 individuals interested in all things pertaining to the water.

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BOATING**

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We offer to motor boat owners and dealers located in the Central West the most complete marine supply service that can be found in this part of the country. We carry in stock, ready for prompt delivery or shipment, a complete assortment of all the standard articles and staples in boat supplies and marine hardware.

Our prices are as low as can consistently be made on articles of standard quality. We stand back of every article we sell.

Orders sent us by mail, special delivery or wire receive the same prompt and careful attention as the man who visits our store. If you keep a copy of our catalog on hand you will be able to get your marine supplies with the minimum of delay.

In addition to our large retail and jobbing stock we are manufacturers of the following:

Pure Wool Bunting U. S. Ensigns, U. S. Yacht Ensigns, U. S. Jacks and special and private burpees or pennants. Canvas Cork Filled Fenders. Manila Rope Fenders. Kapoc Filled Life Preserver Cushions.

Yacht Sails, Spray Hoods. All kinds of leather and canvas cushions made to order. Canvas buckets. Our Patented "Nobind" Stuffing Box and Strut is made in our own foundry together with other brass goods.

Write to-day for free copy of our complete catalog. New catalog will be issued about January 1st. Sent on request.

The Upson-Walton Company
Established 1871

1310 West 11th Street : Cleveland, Ohio

This Big Boat Top Catalog is Free!

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Boat tops have rustproof frames and are built to order to fit your boat—guaranteed to fit perfectly. Send for the catalog now and some day you'll be glad you did.

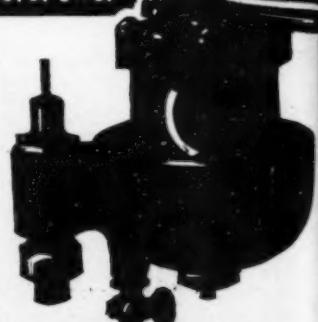
THE R. L. KENYON COMPANY
429 Meadow Street Waukesha, Wis.

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20% More Power **DAYS** **TRIAL**

We absolutely guarantee the Krice Carburetor to use less gasoline—give better control and 20% more power. Your money back if it doesn't.

The only sure way to know that you are getting ALL the power from your engine is to try a Krice Carburetor. Write today for literature.

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MANUFACTURED BY DURKEE

Patented Sept. 20, Oct. 4,
Oct. 18, Nov. 1, 1910;
April 4, 1911; Feb. 6,
Feb. 27, 1912.

The Andrade Automatic Windlass

For boats 25 feet long and over



The "Ketcham" and The "Rusher" Proof Gasoline Protectors

(Patents Applied for)

It would be hard to find a Motor Boat or Automobile Owner who has not suffered the loss of Gasoline. Sometimes it's a sneak-thief, sometimes —well, best not said.

These two new Gasoline Protectors will pay for their cost in such a short space of time, and remove the annoyance of loss of Gasoline, when usually most difficult to obtain.



The Patterson Trap Ventilator

(Patented)



THE RELIABLE FIRE EXTINGUISHER

Was designed for especial efficiency in extinguishing Gasoline, Electric and Acetylene Fires. It has proven its merit, times innumerable, in saving both a price within every owner's means and fills

Motor Boats and Automobiles. It is sold for all Federal requirements, of course.

Pyro Marine Alcohol Stoves

Made in 1, 2, and 3 Burners

Two Burner Stove



This Stove has been made to fill a general demand for a Marine Stove with separate tank. Copper tank holds $1\frac{1}{2}$ gallons, with gauge showing contents.

With each tank is furnished 3 ft. of flexible copper tubing so that tank can be placed either inside or outside of galley.

Tank Complete, \$3.50. Weighs 20 lbs. Height 14 $\frac{1}{2}$ in. Overall 12 x 22 in. Price \$9.00.



Crescent Ball-Bearing Anchor

Patented



Galvanized with Drop-Forged Shank constructed right from the right material and on right principles. The slightest pull on cable sends shank into position. Shank has ball socket and is cast into head, doing away with need for pin to keep shank from backing out. Can be furnished with round shank to swivel, but we do not advise the use of a Swivel Shank Anchor. All weights from 5 to 300 pounds.

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Send 30 Cents to pay postage on 1012 page Catalogue or get it through your Dealer free.



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WE'VE changed our sales plan. We're cutting out the dealer. We're offering you identically the same motor as before at just what we formerly charged the dealer. Ours are not the common mail-order "made-to-sell" motors. They're built for service—long continued, uninterrupted service. They embody not only the best materials, but also the best design and workmanship. To prove it, we offer you any size of American motor, from 2 to 30 H.P., on

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American

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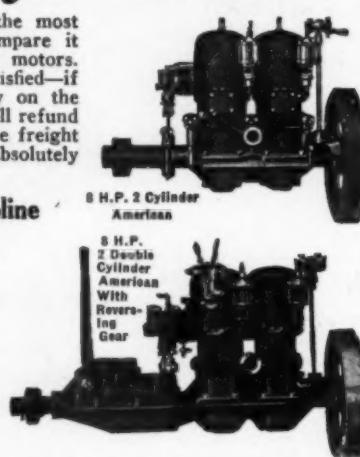
Burn Kerosene or Gasoline

or practically any other liquid fuel with the same success as gasoline, if you order your motor equipped with our special Kerosene Carburetor. It costs very little more, but the saving it effects is phenomenal.

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With Reversing Gear

8 H.P.

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Baldridge Reverse Gear

Questions of
Mr. Careful Gear Buyer
No. 15

"What about the main shaft?"

Before you buy any gear consider well its main shaft. The gear's life, its up-keep cost, its satisfaction, its safety are centered in it.

It is the "unbroken main shaft" that makes the Baldridge Gear wear longer, run smoother and safer and cost less to operate. Shaft extends unbroken from bearing to bearing—receives full support of both. Can't sag, bind, heat or grind—keeps every moving part in perfect alignment always. Specify "Baldridge" because no gear with a divided main shaft can possibly give near the "Baldridge" service.

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Handled in Canada by The Canadian
Fairbanks-Morse Co., Ltd.



"The gear
with the
unbroken
main shaft"

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5 Years Guaranteed Detroit Engine

Starts without cranking, has only three moving parts, uses gasoline or kerosene.

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Special price on first Blue Bird in any locality. Every boat thoroughly guaranteed and tested before shipment. Demand enormous—order now.

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Detroit Boat Company

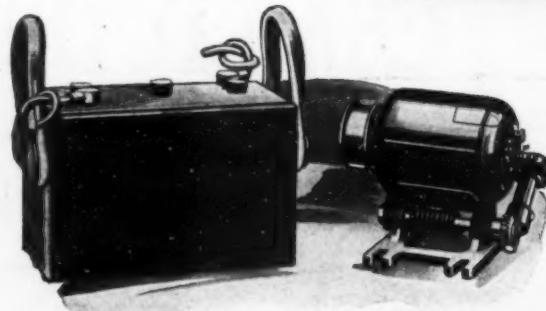
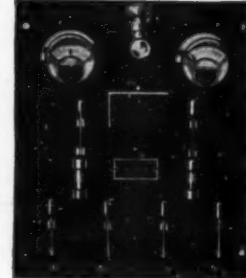
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The Pioneers of Motor Boat Electric Lighting Systems

A complete new line of dynamos is being furnished for marine lighting work, and the various component parts have been improved, making them more compact and serviceable.

The APELCO Systems are furnished in three different sizes, known as Model B-1, B-2 and B-3.



APELCO B-2 Motorboat Electric Lighting System

Our FREE BOOKLET on Motor Boat Lighting and Starting Systems or book to explaining in detail our several products, will be sent cheerfully upon request. Or, better still, call at our nearest service and distributing station for full information.

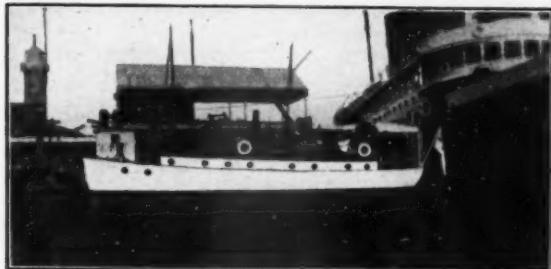
THE APPLE ELECTRIC COMPANY

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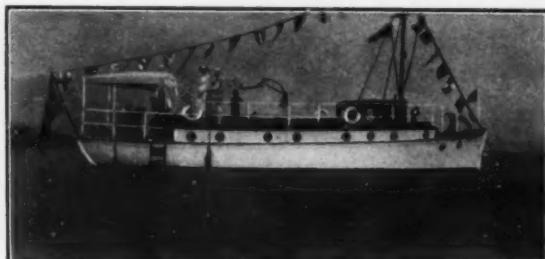
ATLANTA	10-12 E. Harris Street	LOS ANGELES	1215 S. Hope Street
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This Is The Engine That Towed The Others Home

Below we show two views of the Motor Boat "Nahleen" owned by J. Musgrave, Victoria, B. C. The "Nahleen" is 50 ft. 6 inches over all, 11 ft. beam and draws 4 ft. Equipped with a Doman 30 H.P. 4 cylinder (6 x 6) motor and has a speed of 9½ to 10 miles per hour. Built by Bailey of Hong Kong, entirely of Teak with Mahogany interior.



The "Nahleen" doing Patrol Duty for the British Navy at Esquimalt, B. C.



The "Nahleen" at Maple Bay Regatta, Vancouver Island, B. C.

Read This Letter

It Explains How

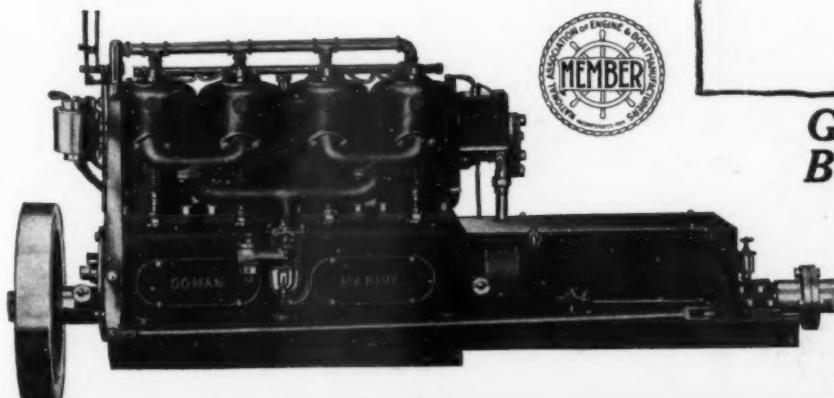


Stood Up Under The Strain of Heavy Work Without a Single Mishap

whereas six other supposed-to-be-reliable engines broke down—some of them several times—attempting to do the same kind of work.

This is but one of hundreds of instances where the Doman has proved its absolute reliability and stability under the most trying conditions of sea and weather.

It is this absolute "bankability" that has made the Doman the mistress of inland seas and open waters wherever motor boats are used.



Victoria, B. C.
Sept. 21, 1914.

The H. C. Doman Co.
Oshkosh, Wis.

Dear Sirs:

With reference to my letters to you of July last and your replies thereto. For the month of August I have been using my boat as a Patrol launch in and about the Naval station of Esquimalt, Vancouver Island, having put her at the disposal of the Naval Authorities. During this time your 30 H.P. medium duty engine has given absolute satisfaction. The work included not only Patrol work from five to nine hours every night, during which time the engine was running without a stop, but also the greater part of the day was taken up in carrying men and supplies to different warships and points in the harbor. This latter work was a severe test on the engine as it entailed short runs at full speed with quick stops, reversing, etc. I also did a lot of tow work, scows, barges, etc. loaded with coal, ammunition, men, etc. On one occasion I towed a scow loaded with 450 tons of coal, and on another towed a steamer of 800 tons from a wharf to her moorings in the harbor.

To give you some idea of the severity of the work I may say that some five or six other motor boat owners also loaned their boats to the Naval Authorities, and every boat's engine, except mine, broke down—some of them several times—and three of them were towed in at different times by my boat. The engines were good ones too, as shown by the following list: (Note—Names withheld.)

During the whole month I had not one moment's trouble with my engine.

Yours very truly,

(Signed) J. Musgrave.

Commissioner for taking affidavits in B.C.

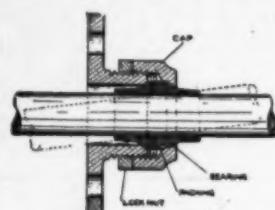
Get the Doman Catalog Before You Buy an Engine

Learn how it is and why it is that the Doman always "makes good." There's a Doman for every motor boat need, and it will pay you to investigate before you order a boat engine.

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The "NOBIND" Patented Stuffing Box



lubricating packing and needs no attention during the season.

Contains a universal bearing that can be replaced if worn or damaged, without replacing the entire box. Costs no more than the common style and is more satisfactory.

Sold by all dealers. Write for literature illustrating and describing the "NOBIND" and give your dealer's name.

Manufactured and distributed by
THE UPSON-WALTON CO.

Marine Supply House

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DON'T BLAME YOUR MOTOR. GET A

RYANT & BERRY PROPELLER SPEED GUARANTEED

We Guarantee

1 to 3 Miles Per Hour

To Increase the Speed of Your Boat

This is the guarantee we have been making for the past five years, the guarantee under which we have sold thousands of B. & B. propellers. This is your protection and insurance of satisfaction when you buy a B. & B. wheel. You don't have to depend on argument or unfounded claims.

B. & B. propellers give you the highest degree of speed and power your boat and engine are capable of. The efficiency is as near perfection as it is possible to attain. They reduce the percentage of slip and produce the maximum propelling force for the horsepower used.

The materials and workmanship used in B. & B. wheels are equal in superiority to the design. We use a special bronze as strong as steel. The accuracy and finish are beyond criticism. And in spite of all this, our prices are lower than for any other make of wheel.

When you buy a propeller, get a genuine B. & B.—don't accept a substitute or imitation. Look for the name "Bryant & Berry" stamped on the hub. Certain peculiarities of design make it impossible for copies of our wheels to equal the originals in efficiency.

BRYANT & BERRY COMPANY
28 WEST ATWATER ST. DETROIT, MICH.

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KENNEY FEATHERWEIGHT SILENCER

Does your

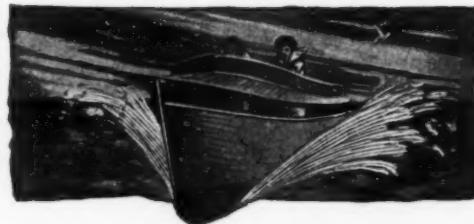
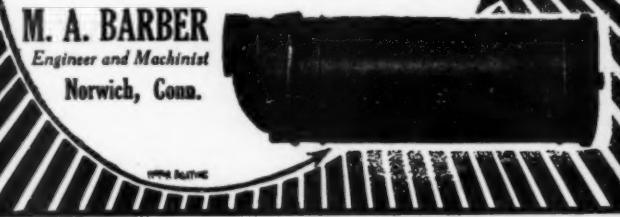
boat sound like a German rapid-fire battery in action, or a boiler shop on a busy day? The laws in nearly every locality require the use of an efficient silencer, and every self-respecting motor boat owner wants such a silencer on his boat.

The Kenney Featherweight Silencer is a real *silencer*, and it's lighter than any other efficient silencer. The body is pure copper and will not corrode. The whole device is light, strong, easily cleaned and so durable that it will outlast your motor. Made for Motor Boats, Automobiles and Aeroplanes. Fully guaranteed and any defects will be cheerfully rectified.

NO	No. to Motor Bores, Inches	Diameter of Exhaust, Inches	Diameter of Shell, Inches	Length of Shell, In.	Approximate Weight, Lbs.	Price
NOISE	1 2 1/2 to 3 1/2	1 1/4 or 1 1/2	6	10	12	\$7.00
ODOR	2 3 1/4 to 4 1/2	1 1/4 or 2	6	14	15 1/2	8.00
CLOGGING	3 4 1/4 to 4 1/2	2	6	16	17	8.50
BACK PRESSURE	4 4 1/4 to 5	2	6	18	18 1/2	9.00
	5 5 to 5 1/2	2 1/4	7	20	26	11.00
	6 5 1/2 to 6 1/2	2 3/4	7	22	28	12.00

Order by number, specify bore and stroke, number of cylinders, two or four cycle. Manufactured and sold by

M. A. BARBER
Engineer and Machinist
Norwich, Conn.



You Can Build This Boat Yourself—SAVE 2-3 of BOAT BUILDER'S PRICE

It's just one of the scores of boats of all kinds featured in the Brooks Boat Book.

With the Brooks system you can easily build a beautiful boat, and the plan saves big money. We supply all parts cut, shaped and fitted—you simply put them together. Full directions and patterns show how. Or if you want full sized patterns only, we supply them from \$2.00 up.

See illustrations and descriptions of fine cruisers, motor and power boats, canoes—all models that you can build. Latest designs, new "V" bottoms, etc.

As a special offer, we quote the knocked-down frame of this 12-passenger, 23-foot motor boat, including full sized patterns and illustrated instructions to finish. Speed 9 1/2 to 14 miles per hour with from 6 to 12 h.p. Mail postal today. Address

BROOKS MFG. COMPANY Only \$33
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THE JOHNSON MARINE REVERSE GEAR

Embodies the A. B. C. of High Grade Reverse Gear Construction

A for ALLOY STEEL: 3½% NICKEL STEEL used in all GEARS and SHAFTING, properly hardened and heat treated.

B for BALL BEARINGS: DOUBLE ROW BALL BEARINGS of an approved type on the main drive shafts in each end of the case, the propeller end one being a DOUBLE THRUST BEARING.

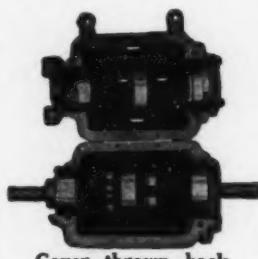
C for CLUTCHES:

THE JOHNSON FRICTION CLUTCH

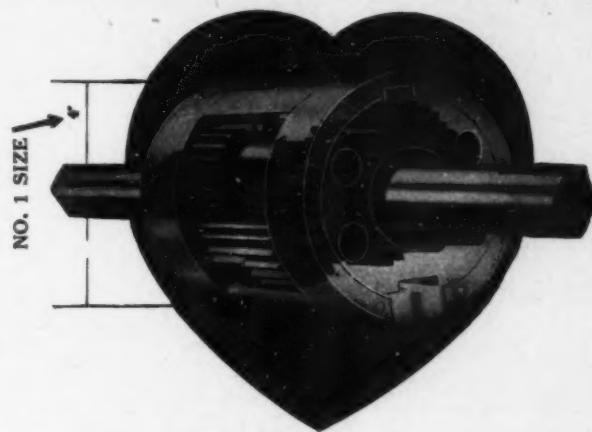
in a DOUBLE TYPE is THE HEART of THE NEW JOHNSON ALLOY STEEL REVERSE GEAR.

Investigate these features, new to REVERSE GEAR construction, which we have successfully applied and used, and then use your own judgment in selecting the Gear for your own boat for the coming season.

This is the interior of the Alloy Steel Gear that you have seen Advertised in Motor Boating for the past six months.



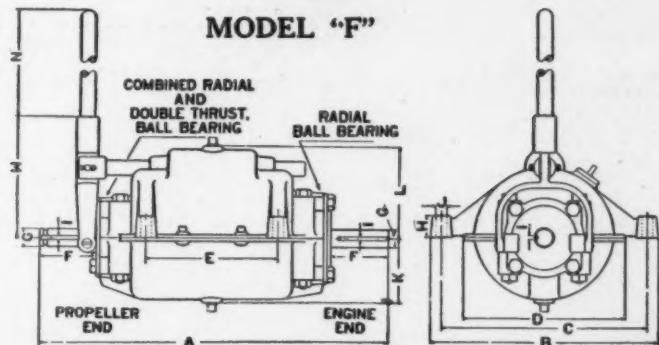
Cover thrown back



Compare carefully its construction with any other make on the market before placing your order.



Exterior



Gear No.	H.P. Per 100 R.P.M. Max.	H.P. for High Speed Motors Max.	H.P. for Medium Speed Motors Max.	WEIGHT		List Price for Cast Iron Case	List Price for Aluminum Case	DIMENSIONS IN INCHES												
				Cast Iron Case	Alum- inum Case			A	B	C	D	E	F	G	H	I	J	K		
0	½	5	3	23	19	\$24.00	\$36.00	12 $\frac{3}{8}$	7 $\frac{1}{4}$	7	5 $\frac{1}{2}$	4 $\frac{1}{2}$	2	$\frac{5}{8}$	$\frac{3}{4}$	$\frac{1}{8}$	2 $\frac{1}{4}$	3 $\frac{1}{2}$	4 $\frac{1}{8}$	7 $\frac{1}{4}$
*1	1	10	5	40	32	36.00	48.00	16 $\frac{7}{8}$	9 $\frac{1}{8}$	8 $\frac{3}{4}$	6 $\frac{5}{8}$	4 $\frac{1}{4}$	3 $\frac{1}{4}$	$\frac{7}{8}$	1	$\frac{1}{4}$	2 $\frac{1}{4}$	4 $\frac{1}{8}$	5 $\frac{5}{8}$	13 $\frac{1}{2}$
2	3	30	15	93	75	48.00	60.00	21 $\frac{1}{8}$	11 $\frac{1}{8}$	9 $\frac{1}{8}$	8 $\frac{3}{8}$	6 $\frac{1}{2}$	4 $\frac{1}{8}$	1 $\frac{1}{8}$	$\frac{1}{4}$	3 $\frac{1}{4}$	3 $\frac{1}{4}$	5 $\frac{1}{8}$	6 $\frac{5}{8}$	15 $\frac{1}{4}$

*Delivery date on request on this new size.

A Comprehensive Test just made of the three sizes of Gears listed above, by one of the large Marine Motor Manufacturers gave the following results. For brevity sake we have only shown part of this test, but it will outline to you, Mr. Purchaser, that Johnson Gears are Manufactured with a factor of safety equal to double their rated capacity, and more.

Gear No.	Clutch Carried Without Slipping		Clutch Slipped		Carried on Reverse		R. P. M.		H. P. Delivered	
	Forward	Forward	Without Failure	Failed	Motor	Dyn.	At Actual Speed	Per 100 R. P. M.		
No. 0.....	65 lbs.	77.50 lbs.			895	895	11.10	1.24		
No. 1.....	140 lbs.				890	885	13.00	1.47		
No. 2.....	315 lbs.				880	880	23.5	2.67		
					850	850	50.97	6.00		

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The Matchless Line of Engines at a Matchless Price

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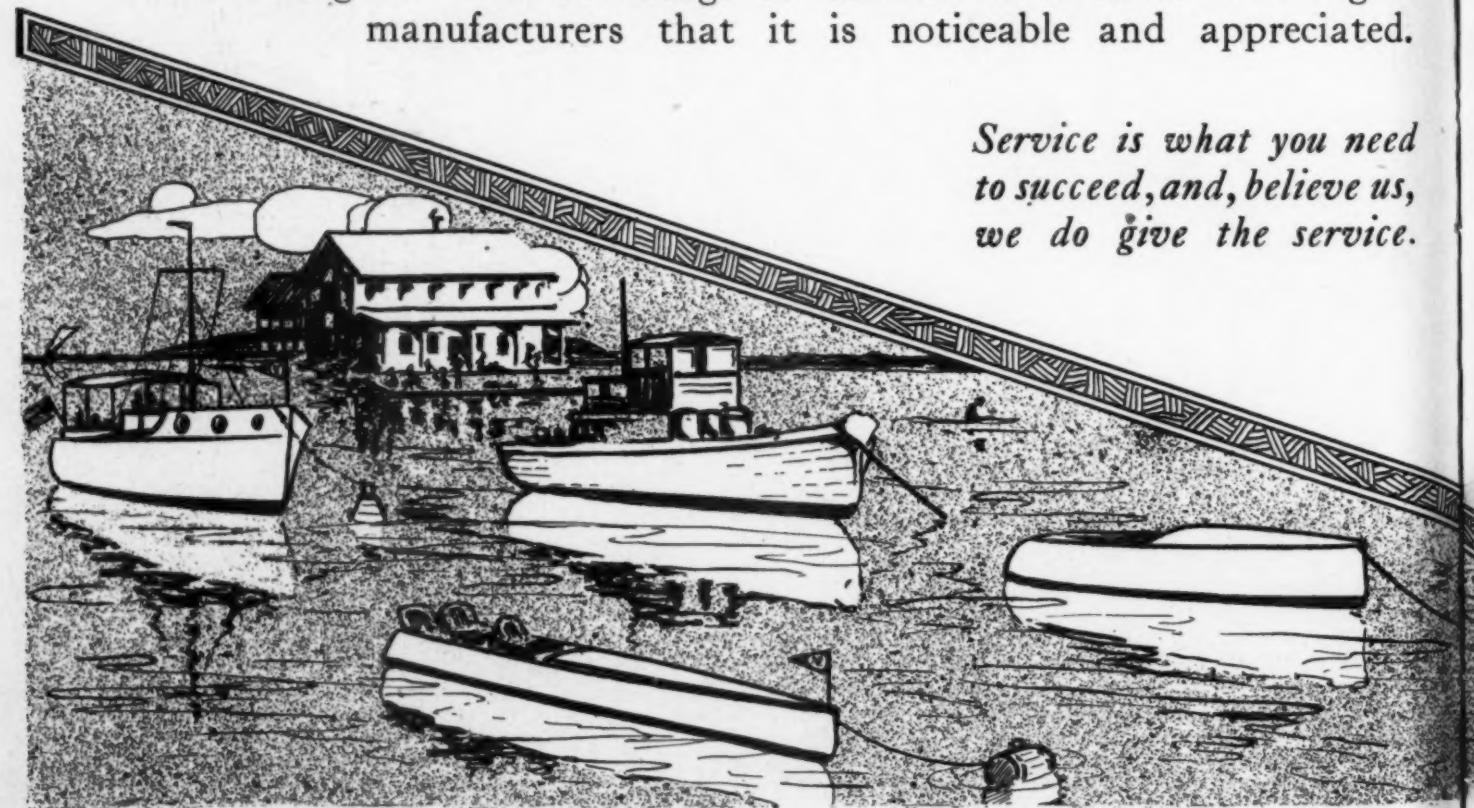
THE FLYING "EAGLE"

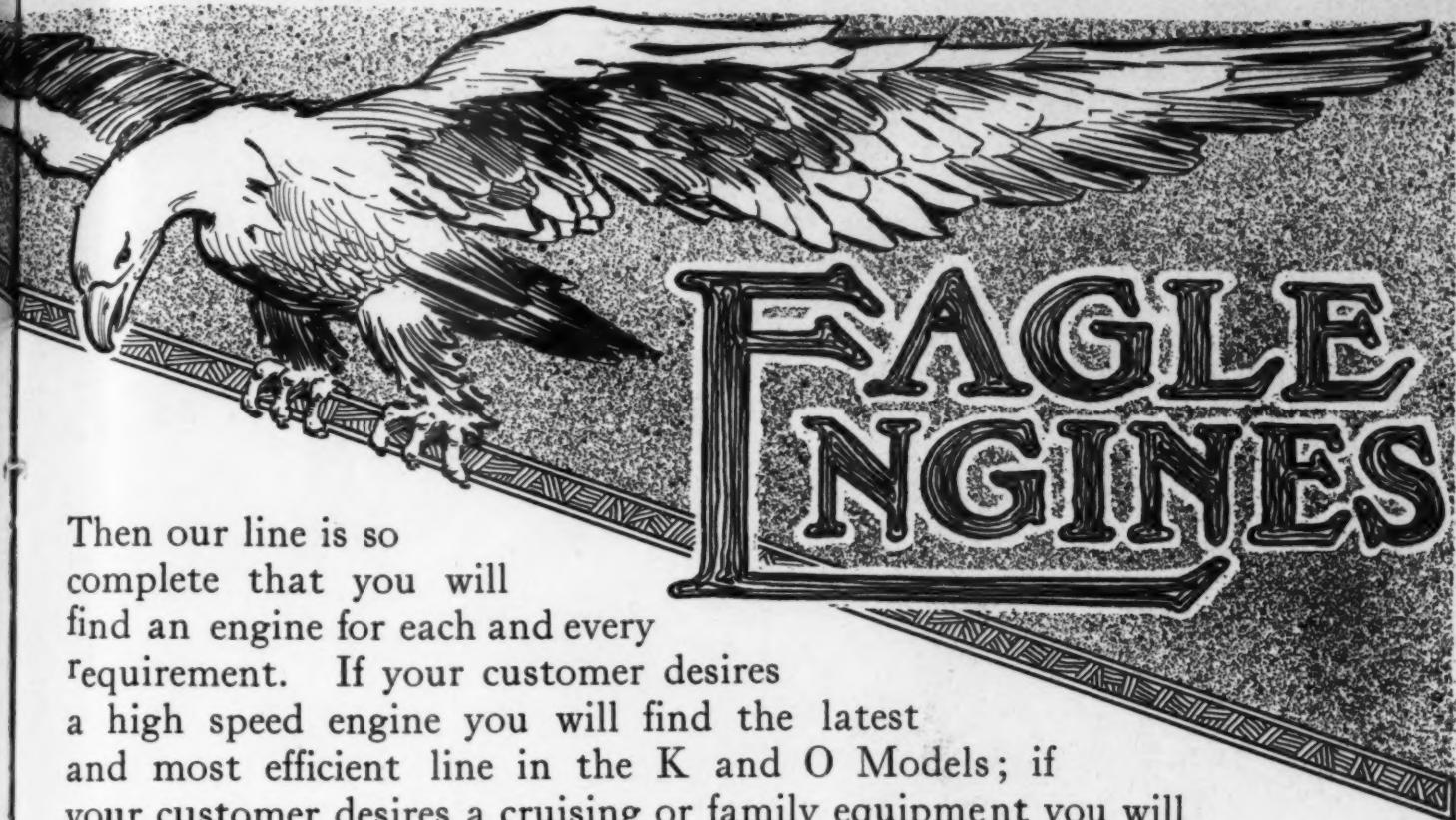
16 foot Displacement Boat. Guaranteed speed 22 miles per hour.
The fastest boat in the world for its size and horse power.
Write for particulars

You never find us offering second hand or obsolete types of EAGLE Engines at cut prices. No dealer has to contend with such uncalled for business practices who handles our product. It's unfair to the dealer if he is obliged to sacrifice his profits

for the sake of the manufacturer trying to force his sales. If you do not happen to be one of our live and prosperous dealers you should lose no time in writing us. We do things so different from most other engine manufacturers that it is noticeable and appreciated.

Service is what you need to succeed, and, believe us, we do give the service.



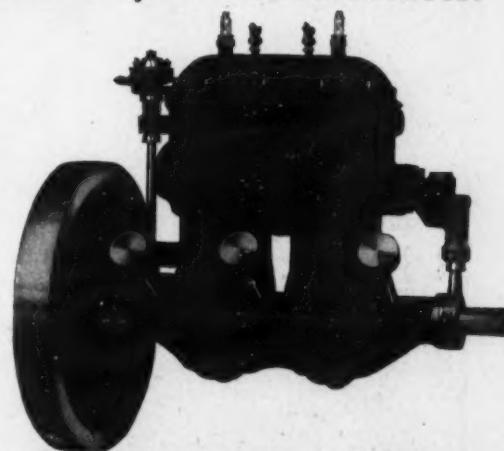


EAGLE ENGINES

Then our line is so complete that you will find an engine for each and every requirement. If your customer desires a high speed engine you will find the latest and most efficient line in the K and O Models; if your customer desires a cruising or family equipment you will find them in the B and C Models; then there is the large, practical heavy duty line in Models D, E and R for work, and cruising boats, and remember these represent every requirement where a two cycle engine is desirable. It is the most complete and largest line of two cycle engines offered by one manufacturer.

This is the time, and it's none too early, to consider your plans for 1915. As it costs you nothing to investigate what we have of interest for the marine trade in general, take the time to post yourself and be ready for the demand which we believe will be greater in 1915 than ever before. There is no pleasure that compares to water sports, others come and go but boatmen increase each year and the sport goes on forever.

*Catalogue mailed
free upon request*



The illustration shows our Model 2 "O" 12 H. P. High Speed, 3 port 2 cycle Engine. This is the Model that is driving the wonderful speed boats "EAGLE KID" and "FLYING EAGLE" of Atlantic City. They are the two fastest boats for their size and horse power in the world. This motor is cast in block—weighs only 250 pounds and has a greater range of speed than any 2-cycle Engine ever built. We consider this Engine at its price of \$160.00 the greatest Engine value ever offered. Send for our catalog and become familiar with our extensive line of two-cycle engines.

The Standard Company

Torrington, Conn., U. S. A.

CAN YOU
BEAT
THIS?

GUARANTEED
FOR
LIFE

MIANUS

MOTORS

Gasoline

Don't buy a marine motor with an indefinite guarantee if you want to get continued service from it, year after year. If the manufacturer of such a motor hasn't faith enough in his product to guarantee it for life, how can he expect you to have faith enough in the motor to invest your money in it?

Mianus Motors are Guaranteed for Life, but this guarantee is not inspired by unwarranted enthusiasm or blind confidence in our product. We know how Mianus Motors are standing up in the hands of their present users, and we know what features of design, materials and workmanship we put into them that makes them stand up. One guarantee is definite and it is backed by the determination to make good.

A FEW MIANUS POINTS

LESS FUEL—Compares favorably with four cycle in fuel consumption, less than one pint per horsepower per hour.

MORE POWER—Develops more power for same bore and stroke. Made possible by our port arrangements and perfect port proportioning.

EVERY PART INTERCHANGEABLE—Made possible by first machining, then grinding to within $1/1000$ " of sizes. Every steel or cast iron bearing surface ground.

WHOLE IGNITER REMOVABLE—All moving parts contained in one piece removable as a unit. Entire igniter mechanism removed and replaced with another in less than one minute.

PLANT—Best equipped marine motor plant in the world.

Kerosene

Gas Oil

Fuel Oil

ALL PARTS ACCESSIBLE—Head, cylinder, upper and lower crank case all easily removable and interchangeable.

CRANK SHAFTS STEPPED—Making it possible to re-finish crank shaft without affecting bore of flywheel or coupling. Both crank shaft and connecting rod are drop-forged of high carbon steel. Connecting rod bushing at each end.

IRIDIUM SPARK POINTS—The most expensive points used in marine motors. Cannot corrode, are soot proof, and unaffected by electricity.

LIFE GUARANTEE—Covering any part that may prove defective in material or workmanship for the life of the motor.

THE MIANUS MOTOR

WORKS, STAMFORD, CONN. U. S. A.

We maintain the following branches to give service to our customers:

New York City: 321 W. 42nd St.
St. John, N. B.: 67-79 Water St.
Norfolk, Va.: 215 West Main St.
Newark, N. J.: 158 Front St.

Baltimore, Md.: 128 Market Pl.
Seattle, Wash.: Colman Dock.
Boston, Mass.: 12 Commercial Wharf.
Philadelphia, Pa.: 608 Arch St.

Jacksonville, Fla.: 24 So. Ocean St.
Portland, Me.: 29 Portland Pier.
Providence, R. I.: 144 Dorrance St.
Eastport, Me.: 127 Water St.

E. J. WILLIS CO.

85 Chambers Street

New York City



New York's Most
Complete Motor Boat
Supply House

Established 21 years.

Large Stock Best Goods
Quick Service Lowest Prices
Every Article Guaranteed.

We do not try to cheapen our goods by manufacturing them of inferior material to meet seemingly low prices, but make all of our products from the very best metal procurable and assemble them with experienced labor.

Our fittings are an ornament to any motor boat instead of a flimsy "make-shift."

Complete catalog "B" Motor Boat Supplies.
Complete catalog "G" Fishing Tackle.
Look for us at Motor Boat Show.



Newest Method of Propulsion for Any Small Boat

THE Aerothrust has fewer parts than any other motor; no trouble with pumps, gears, valves or water jackets.

The speed it will give depends upon the boat, but it has given 15 miles an hour in a canoe and it will give far greater speed than any other type of motor of equal power.

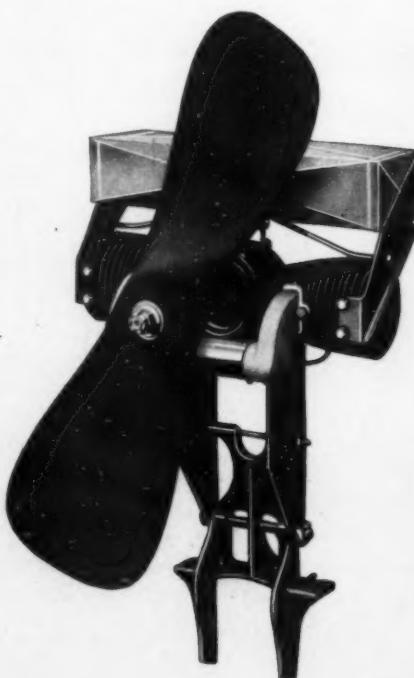
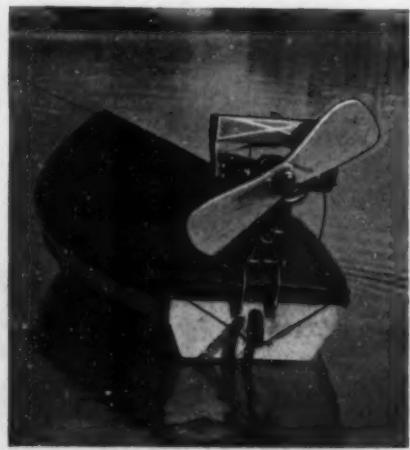
The Aerothrust is perfectly portable, weighing only 51 pounds. Every Aerothrust is sold complete. All you have to do is to clamp it to your boat and start. It can also be used all winter on bob-sleds and ice boats.

Thousands in daily use.

Catalog upon Request.

**Aerothrust
Engine Co.**

301 West Schiller Street
Chicago, Illinois





Aviation Motors for Any Rowboat or Canoe

THE Aerothrust is the simplest, newest method of boat propulsion.

Clamp it to your canoe or rowboat—crank it like an auto and away you go.

The Aerothrust drives your boat through shallow water and through weeds where it is impossible to use any other motor effectively.

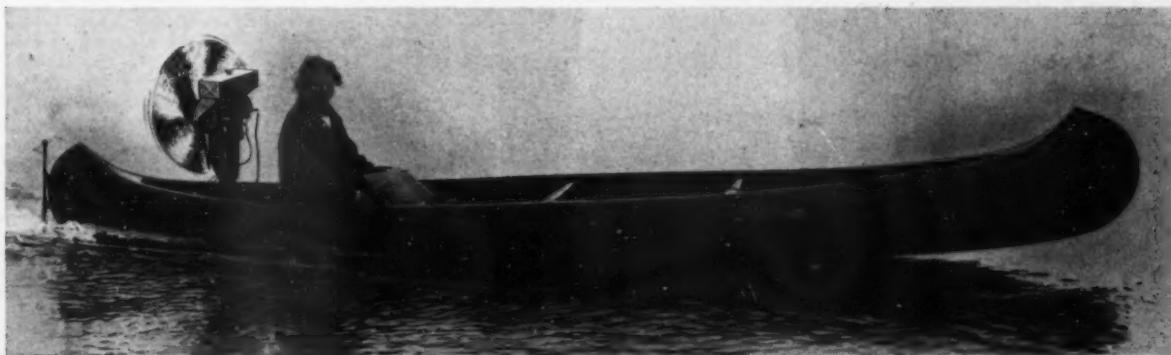
The propeller is entirely above the water, acting on the principle of an aeroplane. It can be located anywhere on the boat—in the stern, amidships or forward.

Catalog upon Request

Aerothrust Engine Company

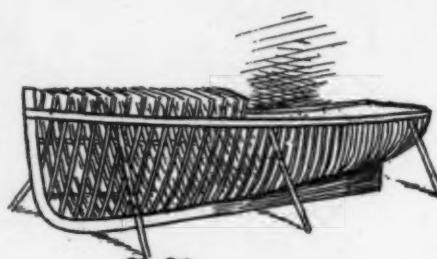
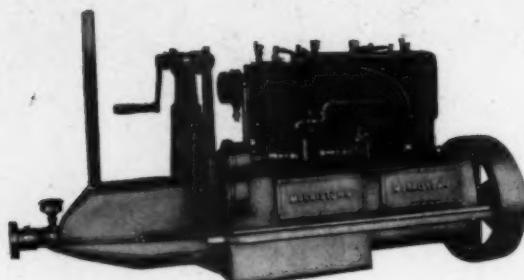
301 West Schiller Street

Chicago, Illinois



Just the Motor

for



*Your
New
Boat*

MORRISTOWN

FOUR CYCLE MARINE ENGINE

Don't waste any more time looking for the most suitable motor for your new boat. If your boat requires in the neighborhood of twenty or twenty-five horse power, and you want the highest quality motor you can buy at a price within reason, your problem will be solved by the new Morristown Motor shown above. Just write us for full information and prices, and you'll see.

We believe this is the highest quality motor of reasonable price ever produced. It is new and up-to-date in every feature. There isn't a single advantage left out on account of its cost. In fact, when the design was completed we were ourselves surprised to find what a comparatively low price we could build it for, quality considered.

It is a light weight motor, weighing only 525 lbs., including reverse gear, magneto, spark plugs, carburetor, etc. The flywheel is heavy, insuring smooth running and the crankshaft unusually stiff and strong, forged from a solid billet of high grade steel. All bearings are very large, upper and lower base aluminum, crankshaft bearings and connecting rod bearing are die-cast nickel babbitt with laminated shim separators, making adjustment very easy.

Every part of this motor is as carefully designed as the few items mentioned above. These, however, show the quality of construction used. We guarantee full brake horsepower and fully guarantee our workmanship and materials.

Write to-day for booklet giving full information.

Price \$450.00 Net. L 90.

2,250 Francs

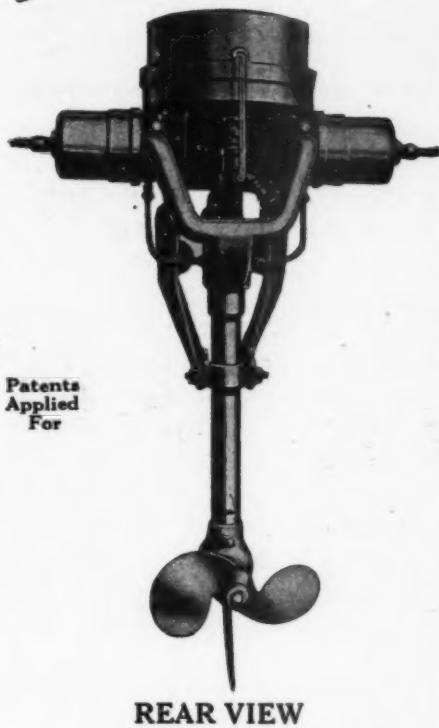
F. O. B. MORRISTOWN, N. Y.

MORRISTOWN BOAT & ENGINE WORKS

MORRISTOWN, N. Y., U. S. A.

New York Agent: Grover C. Kirchhof, 136 Liberty St., New York City

If you are interested in two-cycle motors be sure to write for our catalog, 2 to 15 H. P.

ENCLOSED
FLYWHEELPatents
Applied
For

REAR VIEW

No-Ro

PRESTO MOTOR
3 REAL H. P.NEW PRINCIPLE
UNDER WATER
EXHAUST

“Simplicity Motorfied”

The
WRONG PRINCIPLE
 is not
CHEAP
 at any Price

This Applies to Motors as well as Human Beings

The Motor built with the same engineering principles as the latest high grade sweet running—Multi-Cylinder—Power Plants—found in Motor Car Construction today.

If the crude old Single Cylinder principle was correct why did the brainy engineers of the automobile industry cast it in the “junk pile”? They spent millions to discover this—it costs you nothing to profit by their experience.

Do you want to trust your life in a leaky Boat? The No-Ro principle eliminates disastrous vibration and makes as much difference in boating as the present creation in motor cars over the discarded single cylinder car. Also for canoes.

Only Live Agents Need Apply

CATALOG FREE

No-Ro MOTOR WORKS, Inc. West Roxbury, Mass, U.S.A.



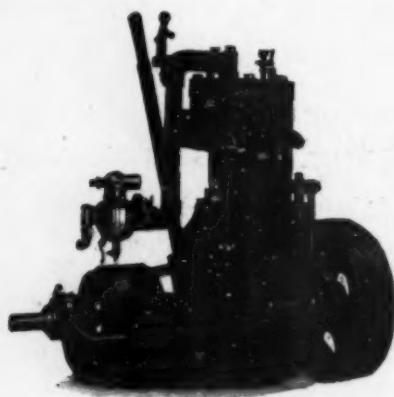
Price
\$75⁰⁰

SIDE VIEW

"Automatic"

The Automatic Four-Cycle Marine Engine is the kind of an engine you can buy on the name. It has made good, the world over. You can buy any model Automatic with full confidence that it will do your work with absolute satisfaction and maximum economy—economy of fuel and upkeep. It is an engine you can entrust with the most important tasks, without fear of delay or failure.

When a man buys an engine for a commercial boat, his income and his success depend upon the reliability of his engine. A few extra hours or days in selecting the right engine, a few dollars more for an Automatic, and he has the most economical investment in the marine engine field. Where steady service and permanent economy is essential, the best is the cheapest.



The selection of a marine engine for a good boat is too important to be satisfied with looking at one or two engines that may be represented in your locality. Go deeply into the question. We stand ready to help you with information about the Automatic that will assist you in judging other engines.

Consider not the price but the reputation and dependability of an engine. Consider how it is going to serve you five or ten years from now, when the price is forgotten and the newness is worn off. Consider how much it is going to cost you to run it and to keep it in repair, and how much time may be lost in delays over a cheap engine.

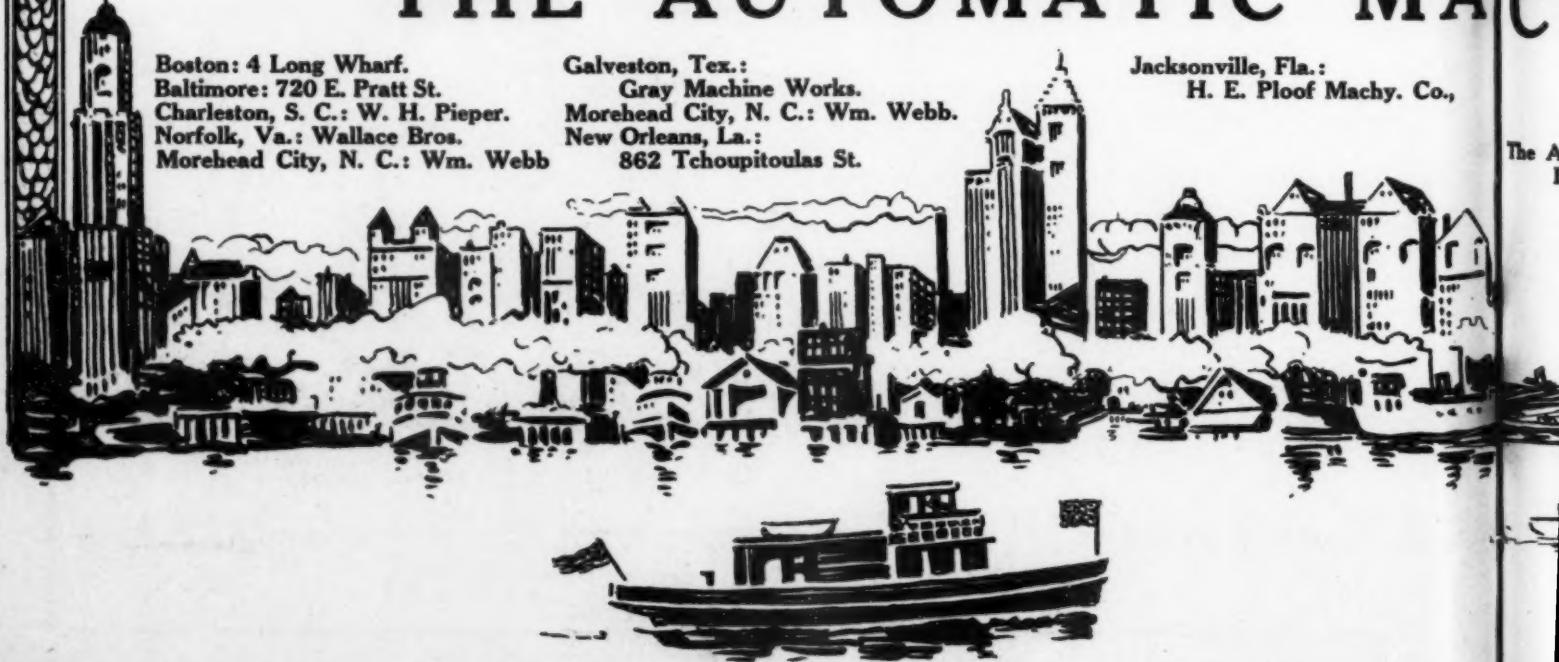
The Automatic reputation is a guarantee of steady service and permanent return on your investment which you can't afford to ignore.

THE AUTOMATIC MARINE ENGINE

Boston: 4 Long Wharf.
Baltimore: 720 E. Pratt St.
Charleston, S. C.: W. H. Pieper.
Norfolk, Va.: Wallace Bros.
Morehead City, N. C.: Wm. Webb

Galveston, Tex.:
Gray Machine Works.
Morehead City, N. C.: Wm. Webb.
New Orleans, La.:
862 Tchoupitoulas St.

Jacksonville, Fla.:
H. E. Ploof Machy. Co.



Marine Engines

Looking at it from the owner's standpoint, extreme simplicity and economy are the predominant characteristics of the Automatic Engines. Superior results in service are, of course, claimed by every high grade engine manufacturer, but there is reason for Automatic superiority, and plenty of letters from users in every part of the world to prove it.

Over a quarter of a century of experience and experiment is back of the Automatic. The design is largely original with us but it is widely copied. We do not know of any marine engine that is as carefully made. The crank shaft is hammered—not drop forged. Gears are cut from solid steel blanks. Every cylinder is an independent unit. Castings are made in our own foundry to our own special formulae. Every part but the lubricator and carburetor is manufactured from the raw materials in our own plant. There isn't a more complete or better equipped plant in the country for manufacturing high grade marine engines.

In the minor details of Automatic Engines are many refinements that contribute to their perfection—little things that distinguish the engineering masterpiece from the copy. Valves are large and can be removed without taking off the cylinder head. Multi-cylinder engines are regularly equipped with two separate ignition systems, including a geared high tension magneto. A strong reverse gear is built right on the engine bed.

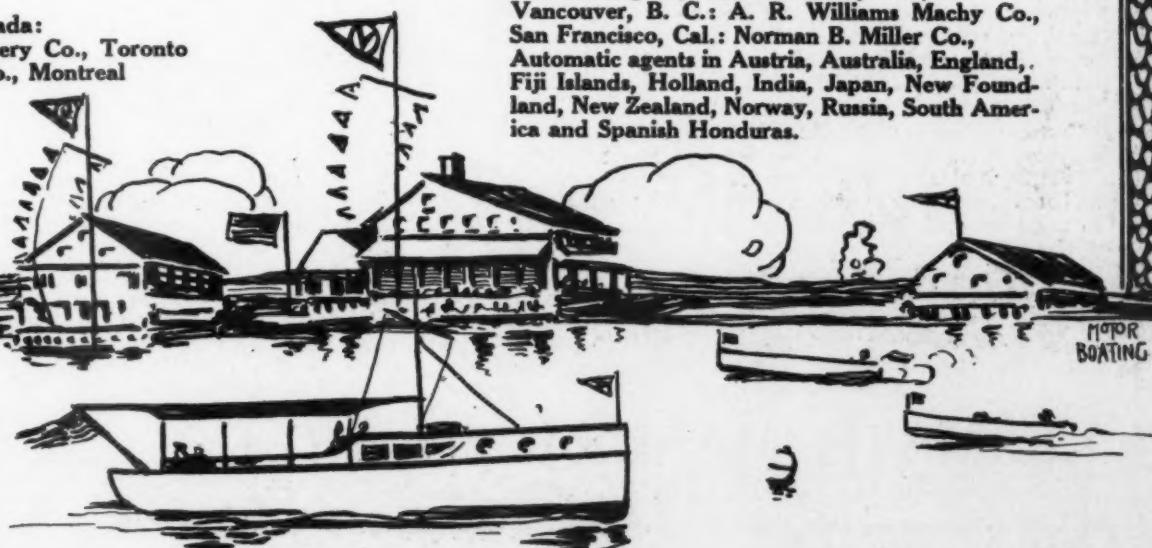
When you are ready to buy an engine let us or our nearest agents help you. We won't press you to buy an Automatic. The engine will sell itself to you. All we need is an opportunity to show it.

Write to-day for catalog

MACHINE CO. BRIDGEPORT,
CONNECTICUT, U. S. A.

Dealers in Canada:
The A. R. Williams Machinery Co., Toronto
Pyke-Putnam Motor Co., Montreal

Seattle Branch: Colman Dock St.
Portland Agency: Rierson Machy. Co.,
Vancouver, B. C.: A. R. Williams Machy Co.,
San Francisco, Cal.: Norman B. Miller Co.,
Automatic agents in Austria, Australia, England,
Fiji Islands, Holland, India, Japan, New Found-
land, New Zealand, Norway, Russia, South Amer-
ica and Spanish Honduras.

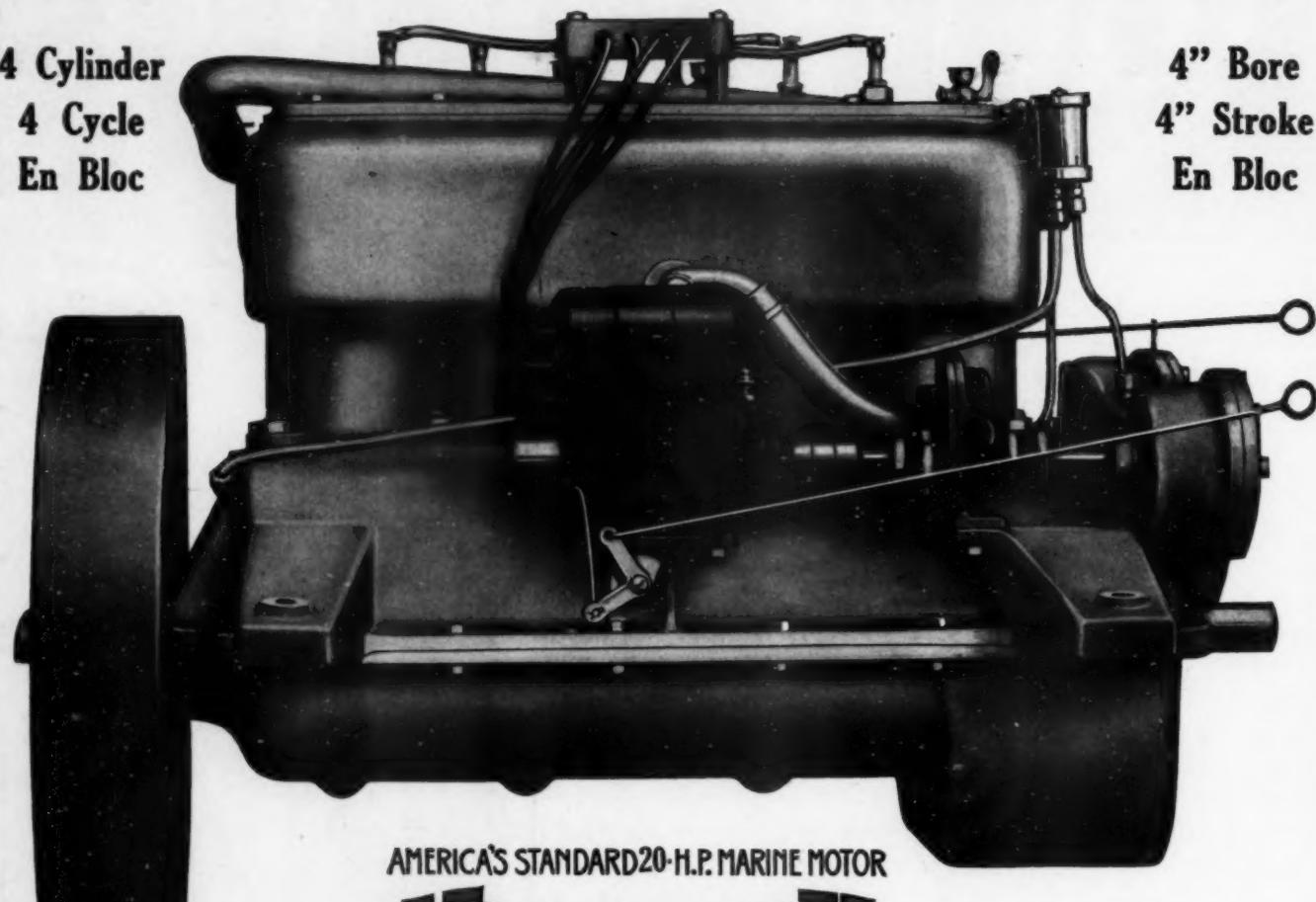


MOTOR
BOATING

NEW 1915 VANADIUM "20"

4 Cylinder
4 Cycle
En Bloc

4" Bore
4" Stroke
En Bloc



\$280 to \$360 depending
on
equipment

We are proud to announce the new Kermath "20" on which we have spent months of painstaking study and testing to produce an engine which, if such a thing were possible, will make even a greater name for itself than our famous "12". Every weak spot known to marine motors has been eliminated and we have added fine detail improvements for the comfort of Kermath owners. We have utilized chrome vanadium steel in our forgings, which is the highest grade of steel and the highest priced steel rolled in America for this purpose. (Other high grade marine engines we know of do not use this high grade material.)

The full water jacketed exhaust manifold does away with all heat in a boat. The heated intake manifold adds greatly to the engine efficiency with the present low grade fuel.

The perfect control and silent operation, combined with the absence of vibration makes this "20" an engine which meets your fondest hopes. As a cruising engine it can be used at 500 to 600 r.p.m., or it can be driven to 1200 r.p.m. for your fast runabout. America's latest and greatest "20" can be bought for \$280.00 to \$360.00, depending on equip-

Made in a unit power plant with
Paragon Reverse Gear or
separate as shown

ment. This is 30% less than you can buy other "20's" and other "20's" do not have over $3\frac{3}{4}$ " bore while the Kermath is a 4" bore motor. Why can Kermath give such value? Because 200 Twenties are going through the factory at the present time and 15% of them are on order at the present time. No other factory is building that many "20's" at a time to cut down the manufacturing cost. No other factory can give you a "20" as fine as the Kermath. Get your order in early and specify delivery, for we do not want to disappoint you. We are shipping at this time and demonstrators are on exhibition at all principal centers with our dealers. With our announcement we are ready to deliver the goods,—the Kermath way of doing things. We have not been telling you for months that we were going to produce something or that we were designing something.

We built this engine months ago and now as a *tried out, tested and proven* proposition we offer it to you. We will make the famous "12" for 1915 with fine detail improvements in greater quantities than ever.

Specifications on request.

KERMATH MANUFACTURING CO., Dept. 2, Detroit, Mich., U. S. A.

Scripps Motors



As Supplied His Royal
Majesty's War Office

WE have just been advised by our Glasgow agents of the purchase by the British War Office of two model K Scripps Complete Marine Power Plants, to be used for patrol duty along the coast of Scotland.

This purchase is of great significance, not only because it is to be assumed that the War Office would purchase none but the most reliable motors for the guarding of its coasts, but because the British government has long been noted for its reluctance to purchase other than "home made" products.

The selection of Scripps Motors at this time marks a decided departure

from their fixed policy—especially as there are hundreds of marine motor manufacturers in England.

Our agents tell us that the Scripps is the only American made or foreign built motor that has been purchased by the Admiralty.

This adds one more to the list of eight governments which have specified Scripps.

1915 Models—Ready for Delivery—Jan. 1, 1915
Watch for Announcement in next issue Motor Boating

SCRIPPS MOTOR COMPANY

DETROIT, MICHIGAN, U.S.A.

New York.....Bowler, Holmes & Hecker Co., 141 Liberty St.
Chicago, Ill.....O. L. Cosgrove & Co., 215-219 Englewood Ave.
Philadelphia.....W. E. Gochenaur, 631 Arch Street
St. Louis, Mo.....Chas. J. Petill, 1860 W. Market Street
Jacksonville, Fla.....Gibbs Gas Engine Co., Foot of Main Street
Seattle, Wash.....S. B. V. Miller, 72 Marion Street

San Francisco, Cal.....Ellery Arms Co., 583-5 Market Street
Los Angeles, Cal.....Marine Engine & Supply Co., 109 East 7th St.
Duluth, Minn.....Kelley Hardware Co., 118-120 W. Superior St.
Toronto, Ont.....Schofield-Holden Machine Co., 2 Carlow Ave.
New Orleans, La.....Arthur Duvic, 130 Chartres Street

Without A Hyde

MOTOR
BOATING

WHAT A HYDE

Don't Squat

Don't Churn the Water

Don't Waste Power

Don't Race Your Motor

Don't Overload Your Motor

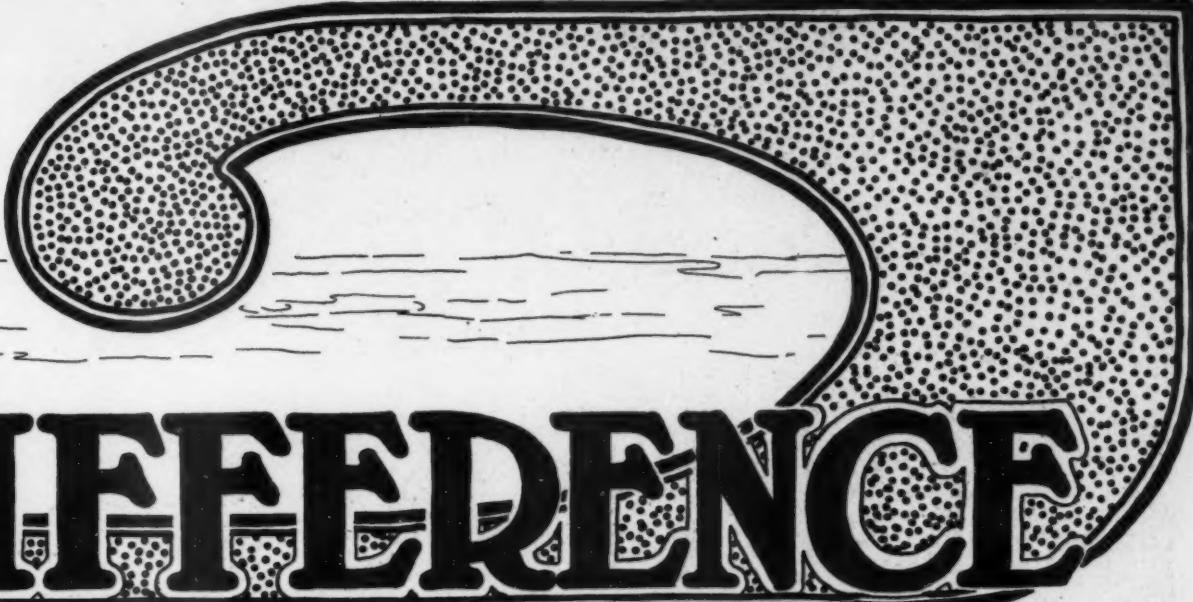
Use A

HYDE

Turbine Type Propeller

If your present wheel isn't just right, you are wasting enough gasoline every season to pay for a new wheel and leave a tidy surplus. Don't put your boat over next season until you are sure you have the right kind of a wheel on it. It will save you money.

*Write us today for
information about
the new
HYDE NO-WEED
PROPELLER—
the most efficient
weedless wheel ever
designed.*



DIFFERENCE

MAKES!

Hyde Turbine Type Propeller

PRICES TWO BLADE		
Diameter	Not Bored	Bored and Keyseated
8 Inch	\$1.35	\$1.00
9 Inch	1.50	1.10
10 Inch	1.80	1.25
11 Inch	2.10	1.61
12 Inch	2.28	1.79
13 Inch	2.70	2.31
14 Inch	2.82	2.39
15 Inch	3.15	2.75
16 Inch	3.20	2.80
17 Inch	4.00	3.48
18 Inch	4.95	5.61
19 Inch	6.00	6.78
20 Inch	6.80	7.38
21 Inch	7.50	8.34
22 Inch	8.10	9.00
23 Inch	9.00	9.88
24 Inch	9.60	10.32
26 Inch	12.00	13.35
28 Inch	15.00	16.50
30 Inch	19.80	21.45
32 Inch	22.80	24.60
34 Inch	26.40	28.59
36 Inch	28.80	30.89
38 Inch	34.80	38.40
40 Inch	43.00	49.20

Every "HYDE" is given a careful balance

Strongest—Made of the famous Hyde Manganese Bronze. If it ever breaks, from any cause whatsoever, we'll replace it free. Used on battleships.

Fastest—Drove Baby Speed Demon II to the world's record of over FIFTY-THREE M.P.H. Used on practically all the fastest and best known race winners and record breakers of the past ten years.

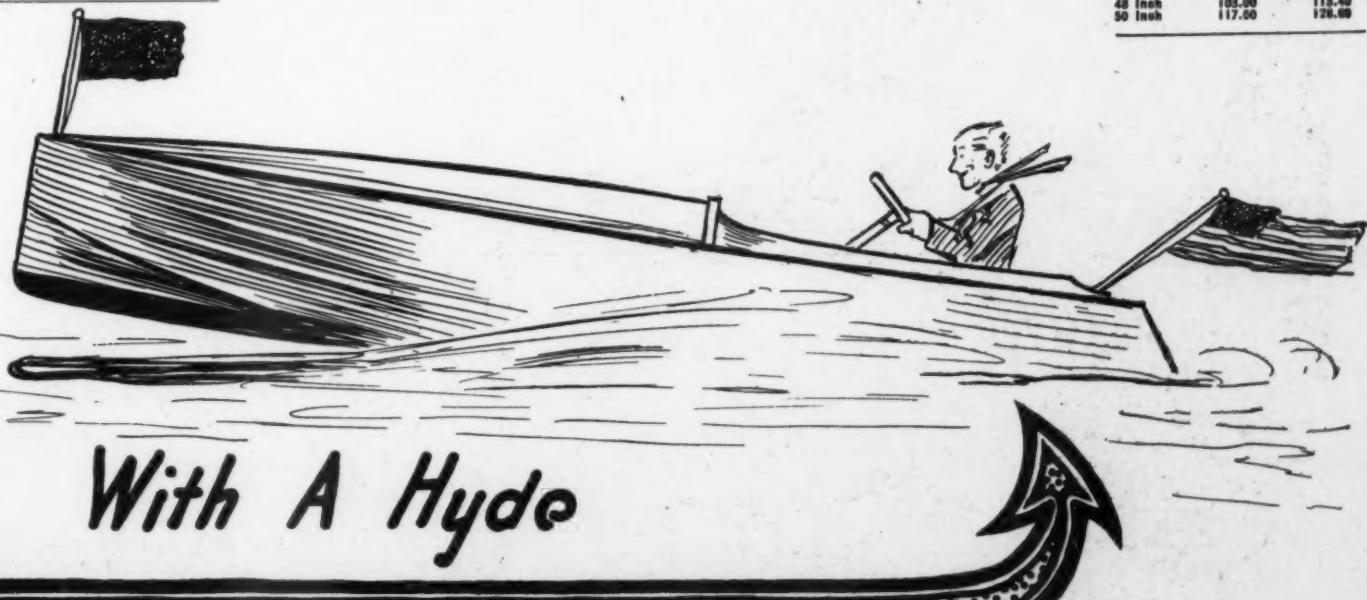
Most Perfectly Designed—Every one of our wheels is scientifically proportioned, giving the highest efficiency possible for the size and type of boat and engine with which it is to be used.

Most Popular—Hyde Propellers are undoubtedly the most popular wheels on the market for high class boats and boat builders.

Tell us the dimension of your boat and details of your engine. Our experts will gladly tell you the size and pitch of wheel which will give you the best results. This service is free. Write us to-day.

The Hyde Windlass Co., Bath, Maine

PRICES THREE BLADE		
Diameter	Not Bored	Bored and Keyseated
8 Inch	\$1.45	\$2.10
9 Inch	1.55	2.40
10 Inch	2.10	2.85
11 Inch	2.35	3.20
12 Inch	3.30	3.81
13 Inch	3.50	4.41
14 Inch	4.20	4.71
15 Inch	5.10	5.78
16 Inch	5.70	6.30
17 Inch	6.20	6.90
18 Inch	6.50	7.55
19 Inch	8.10	9.60
20 Inch	9.00	10.75
21 Inch	9.20	11.00
22 Inch	10.80	11.75
23 Inch	12.00	13.25
24 Inch	13.20	14.82
26 Inch	16.80	18.15
28 Inch	20.40	21.90
30 Inch	23.80	27.40
32 Inch	31.20	35.00
34 Inch	33.00	37.50
36 Inch	39.00	41.40
38 Inch	46.20	50.40
40 Inch	55.80	63.00
42 Inch	66.00	72.00
44 Inch	75.00	82.20
46 Inch	94.00	107.20
48 Inch	105.00	119.00
50 Inch	117.00	126.00



With A Hyde



— the Original "Safety First"
Reverse Gear

If every part of your boat and equipment required as little attention and thought from you as the Paragon Reverse Gear, motor boating would be a continuous round of joy. The Paragon is so quiet, so ever-ready and so trouble-free that the owner seldom gives it a thought.

Every Paragon Gear has ample strength to carry in excess of its rated load, with a further reserve of strength to withstand severe overload. It is as light a mechanism, and as compact as a first-class reverse can properly be made.

Nearly all the best Engine Makers use Paragon Gears

as regular equipment. They know us as Reverse Gear Specialists, and as we produce gears in large quantities for a large number of engine manufacturers, it is only natural that we can produce a better gear for the money than a smaller manufacturer, or an engine builder who tries to make his own gears.

There is a Paragon Gear designed especially for every power, type or size of boat, whether it is a runabout, hydroplane, cruiser or heavy work boat. When you buy a new engine, be sure it is equipped with a Paragon. Send now for the Paragon Booklet.

EVANS STAMPING & PLATING CO., Cushman St., Taunton, Mass.

BRANCHES:

American Motor Equipment Co., 69-73 Washington St., North Boston, Mass.
Bowler, Holmes & Hecker Co., 221 Fulton St., New York City.
Bruns, Kimball & Co., 608 Arch St., Philadelphia, Pa.
Fairbanks-Morse & Co., 17 So. Hanover St., Baltimore, Md.
National Boat & Engine Co. of Fla., Ft. of Main St., Jacksonville, Fla.
Missouri Engine Co., 2806 N. Eleventh St., St. Louis, Mo.
H. R. Chadwick & Co., 1205 S. Michigan Ave., Chicago, Ill.

J. C. Shadegg Engine Co., 315 Third St., So., Minneapolis, Minn.
Marine Engine & Supply Co., 832 So. Los Angeles St., Los Angeles, Cal.
S. V. B. Miller, 72 Marion St., Seattle, Wash.
The Beebe Co., 182 West Morrison St., Portland, Ore.
Barden Electric & Machinery Co., 111 Main St., Houston, Tex.
Handled in Canada by the Canadian Fairbanks-Morse Co., Ltd.
Handled in Australia by Frazer & Best, Ltd., Sydney.

Partial List of Makers Equipping
with Paragon Gears

Anderson Engine Co.....Chicago, Ill.
Clay Engine Co.....Cleveland, Ohio
H. C. Doman Co.....Oshkosh, Wis.
Frisbie Motor Co.....Middletown, Conn.
Gray Motor Co.....Detroit, Mich.
Fulton Manufacturing Co.....Eric, Pa.
Hall Gas Engine Co.....Philadelphia, Pa.
Kermath Manufact. Co....Detroit, Mich.
Holmes Motor Co....West Mystic, Conn.
Geo. Lawley & Son Corp. Neponset, Mass.
Lamb Engine Co.....Clinton, Iowa
J. W. Lathrop Co.....Mystic, Conn.
Loane-Hiltz Mfg. Co.....Baltimore, Md.
Mercury Motor Co.....New York City
Mianus Motor Works..Stamford, Conn.
Missouri Engine Co.....St. Louis, Mo.
Red Wing Motor Co....Red Wing, Minn.
Regal Gas. Engine Co.Coldwater, Mich.
Scripps Motor Co.....Detroit, Mich.
Sloane-Daniel Motor Co. New York City
Teel Motor Co.....East Boston, Mass.
Van Blerck Motor Co....Monroe, Mich.
Wisconsin Motor Mfg. Co., Milwaukee, Wis.
Bridgeport Motor Co....Bridgeport, Conn.
Fairbanks-Morse & Co.....Chicago, Ill.
Emerson Engine Co....Alexandria, Va.
The Standard Co.....Torrington, Conn.
The Stanley Co.....Salem, Mass.
Vim Motor Co.....Sandusky, Ohio

WINTON

Complete Satisfaction or Merely Power

Your choice of an engine for your yacht means just that.

Is it enough that the engine you buy fills the power requirement only?

In this day of mechanically perfect machinery, machinery that operates smoothly and quietly because it is designed and constructed properly, will you be satisfied to invest your money in an engine that has only one attribute of quality?

Your engine need not be a disturbing element to be borne with—a sort of necessary evil.

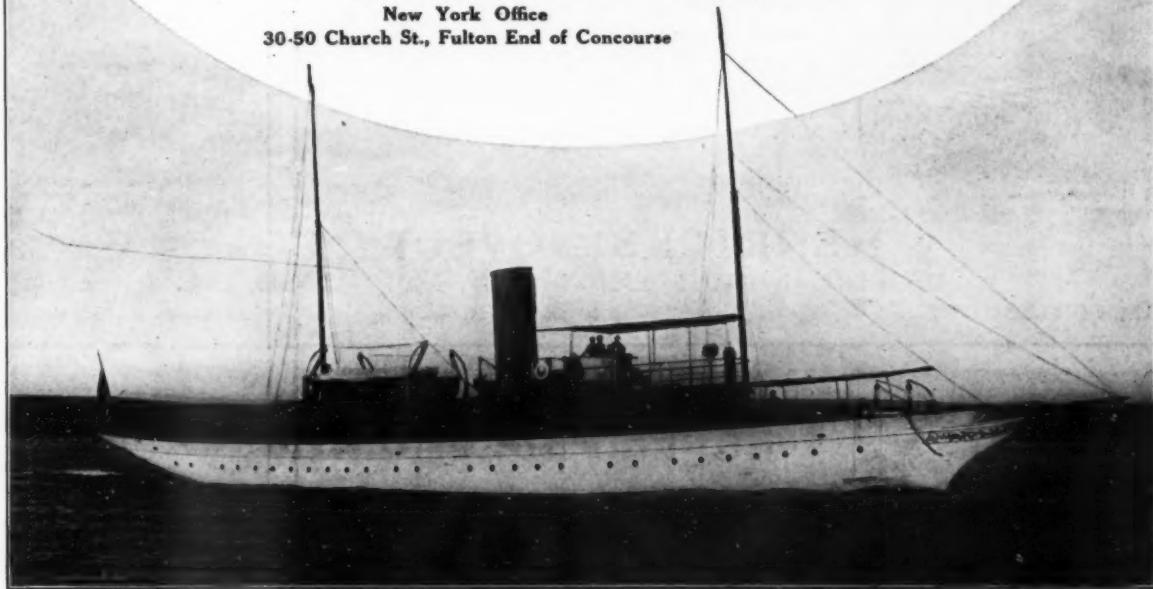
The engine room may be made just as inviting as the deck house. Not by dressing it up so it will have a tranquil atmosphere when the yacht is at anchor, but when the engines are running.

The Winton Engine will make your engine room a place to be proud of. Its quiet and vibrationless operation, its cleanliness and general refinement combined with the utmost in power, will prove a source of complete and lasting satisfaction.

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30,000 Detroit Engines Now Using Cheap Kerosene

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Black, white, yellow or mahogany color. Give black the preference; it is more elastic and satisfactory in every way. Specified by all first-class designers, and used exclusively by all the prominent builders.

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For Waterproofing Canvas, for Covering Decks, Tops of Cabins, Canvas Boats, Canoes and Flying Boats

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Black, White and Yellow

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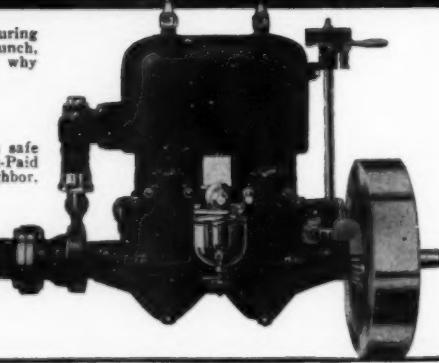


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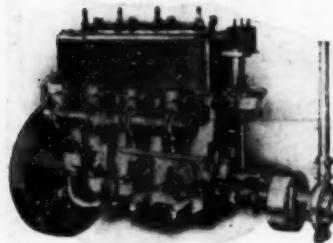
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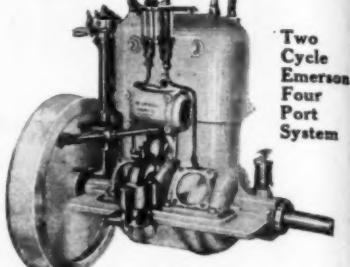
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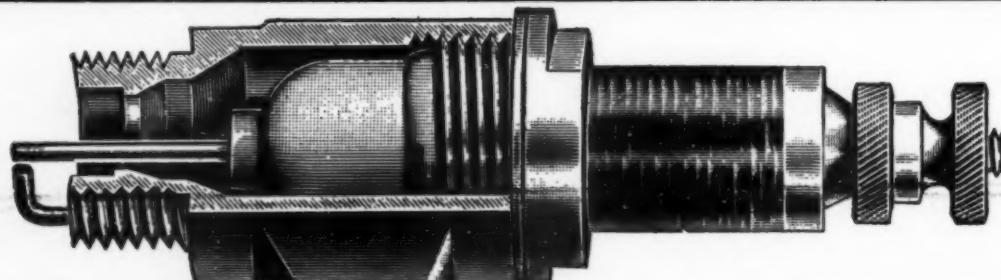


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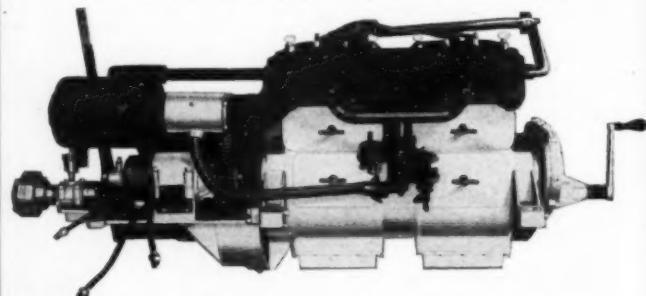
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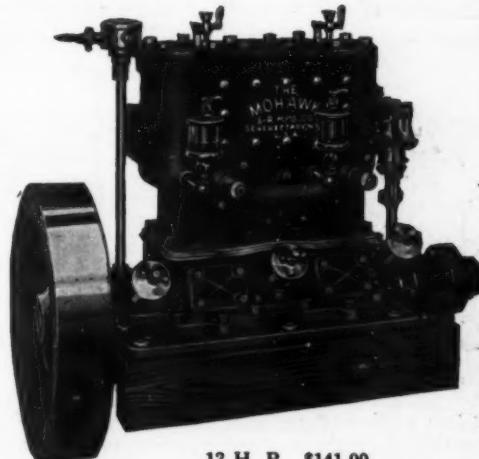
As manufacturers of the Mohawk Motors we are two-cycle specialists. We have probably put more care and study on two-cycle problems than any other one maker. Mohawk Motors show the result in quality, endurance and reliability of service.

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Mohawk Motors are being used with great success and satisfaction in some very prominent speed boats, as well as in launches, cruisers and heavy work boats. There isn't a class of boat or service in which they haven't already made good.

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1 Cylinder, 6 H.P.		1 Cylinder, 5-6 H.P.
2 Cylinders, 12 H.P.		1 Cylinder, 7 H.P.
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A Waterman Model B-4, 24 H.P.

drove the 17 foot "Impudence Jr." to victory at late St. Augustine races, winning cup from 8 cylinder, 200 H. P. 26 footers in 15 knot handicap, repeating last year's success.

Model B-4, shown below, is light weight, racy, clean cut, and dependable to the limit.

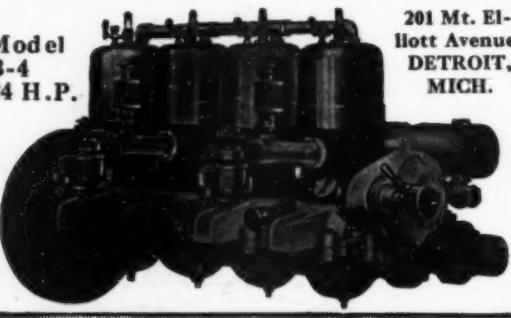
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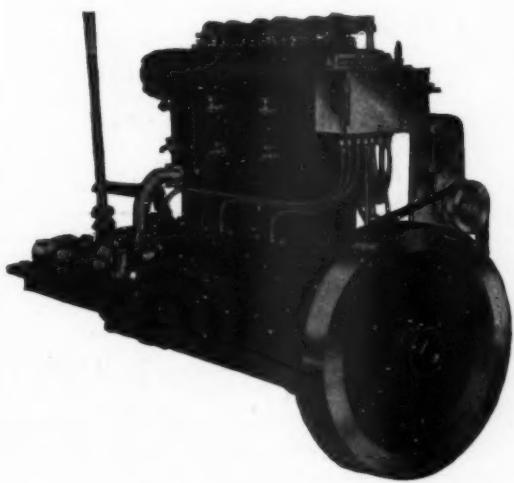
Largest manufacturers of lubricating devices in the world

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Frisbie Motors Are Different

With a difference that presents a valid excuse for selecting them in preference to others.



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The best racing motors and motors for automobiles, aeroplanes, etc., use overhead valves. Gas engine experts concede the superior efficiency to be 15 to 20%. With this advantage in power, economy, flexibility and speed the Frisbie Overhead Valve Motor is not equaled by any other type of marine motor.

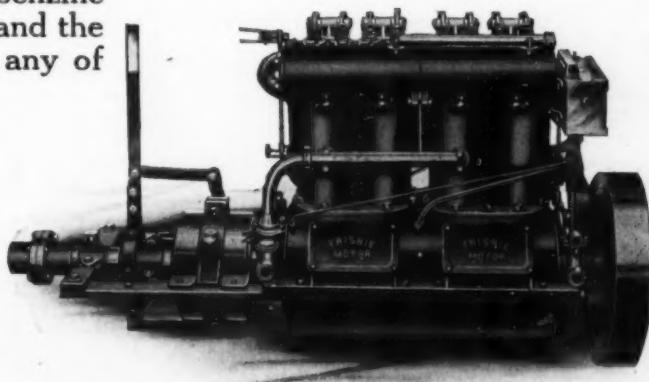
On all 1915 models we are casting the intake and exhaust manifolds integral with the cylinders. The manifolds are thus thoroughly water-jacketed, heating the incoming gas and cooling the exhaust. This method makes a much neater and more compact engine, to say nothing of the gain in efficiency.

Frisbie Motors are built in ten models, from one to six cylinders having from 3 to 75 H.P. You can use kerosene, distillate, benzine or gasoline. There is no smoke or odor, and the speed control is thoroughly flexible on any of these fuels.

*Let us mail you a copy
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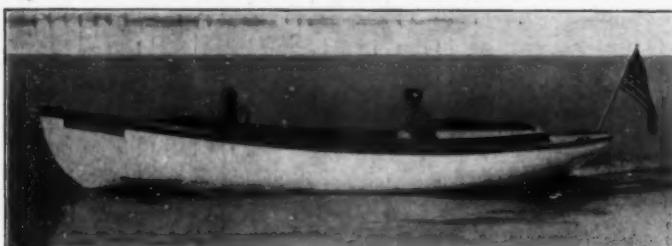
DEALERS: There isn't an easier selling line of engines on the market. Frisbie Motors win out over all competition because they are different and better.

Let us prove it to you.



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MOTOR BOATING



NEW 1915 MODEL
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DORIES



OUR 1915 NEW MODELS:
 16-FT. SPECIAL SPORTSMAN, 2 H.P. FORE DECK, \$150.
 GOV. MODEL DORIES, 18, 19, 22, 23, 30 FT.
 PRICES \$250 TO \$1000.

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READ WHAT CHAS. WINKLER, MANAGER AMERICAN YACHT CLUB, SAYS:

"The 30-ft. launch you built for us proved very satisfactory in every way, and exactly what the club has been looking for. The officers of club are very much pleased with boat and motor, and have asked me to write you and express their great satisfaction."

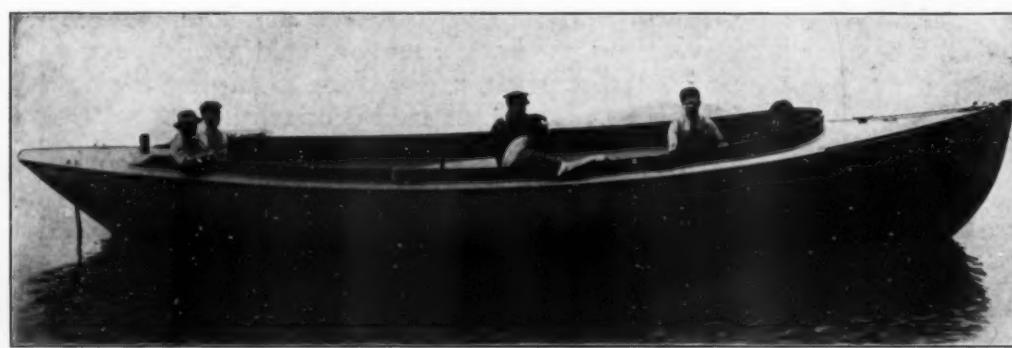
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TOPPAN BOAT MFG. CO.

Messrs.: The 21 x 6 club sailing dory sold me in July has proven to be a very satisfactory small boat, being fast, easily handled and exactly suited to my purpose.

October 30, 1914.

Yours truly,
 C. M. Moore, D. D. C.,
 Menominee, Mich.

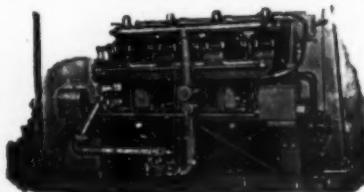


21 x 6 Club Dory
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 THE BEST SAILING
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 14 Ft., \$55 16 Ft., \$90
 18 Ft., 110 21 Ft., 175
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Write today for quotation of your requirements.

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Let us figure on your Crank Shafts (be it one or one thousand). We manufacture them complete in our own plant—forged from the solid billet, grinding all pins and bearings and supply the finished shaft ready to be installed in the engine.

Forgings of all kinds. Die forgings in quantities from 50 and up. Carbon and Alloy Steel Heat Treated to your own specifications. Drop Forged Cranks Finished.

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 Owner, Dr. A. B. Bennett, Jr., Washington, D. C.

NIAGARA BOATS SATISFY

NIAGARA MOTOR BOAT CO., North Tonawanda, N. Y.

Washington, D. C., July 30, 1914.

Gentlemen: I have just reached home after a very successful trip of two and one-half weeks. You will doubtless agree that a new motor boat to make a maiden trip of over one thousand miles in strange hands and through strange waters with a perfect score is worth remarking upon. The power and electric plant gave no trouble whatever, and the boat behaved perfectly in all kinds of weather.

Everyone who comes aboard the Aragon agrees that she is the roomiest boat of her size they have ever seen.

With best wishes always, I am

Sincerely yours,

DR. A. B. BENNETT, JR.

We can build you a cruiser, runabout or speed boat that will satisfy you in every particular.

Write for information and literature advising size and type of boat you are interested in.

NIAGARA MOTOR BOAT COMPANY

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If you install a Ralaco Engine in your boat, you can expect uninterrupted power service as long as your boat lasts, with the lowest cost for fuel and maintenance that any engine of any type could give. From a business standpoint, we believe the Ralaco Engines have established by their steady, reliable service the most valuable selling reputation of any power plant built for the same class of work.

Ralaco Engines are guaranteed to run on 1/10 of a gallon of gasoline per horsepower hour. A 10 H.P. Ralaco will run under full load on one gallon for one hour. A 20 H.P. Ralaco will run one hour with two gallons. There is no question about the fuel consumption or economy. It is positively guaranteed, with an established successful manufacturer back of it.

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A Ralaco makes a quiet, clean, cool engine-room. It is the kind of an engine the owner likes to handle himself—the kind of an engine, too, that you can entrust to an inexperienced assistant without fear of trouble. For cruisers or work boats, in fact any type of craft requiring from 10 to 75 H.P., it is impossible to buy a more satisfactory power plant, or one that will cost less in the long run. Ralaco economy in a couple of seasons pays the difference in cost between a Ralaco and a cheaper engine.

Write to-day for the complete Ralaco catalog

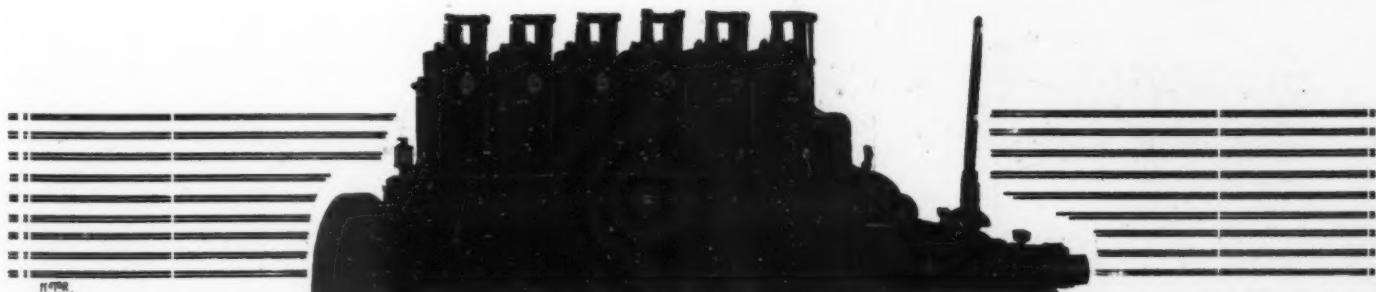
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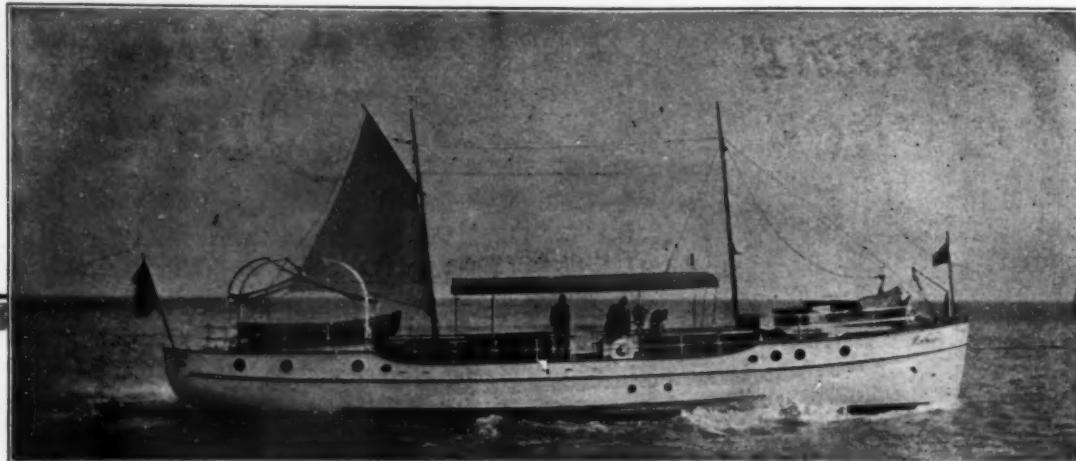
Representatives:

POWER BOAT ENGINEERING COMPANY, 136 Liberty Street, New York, N. Y.
A. W. LePage Gasoline Engine & Supply Co., Vancouver, B. C.



The Six-Cylinder 7 x 9 in. Ralaco. 75 H.P.

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**A Racine Cruiser Gives You Every Feature for Safety,
Comfort and Convenience**

HERE is a 65-foot craft that you could be proud of in any water. You will be delighted in showing your guests the conveniences in its equipment. It has everything that you could think of for safety. The layout gives you the maximum room for comfort. It's thoroughly seaworthy—has an excellent power plant—makes 12 miles per hour with ease.

Write us for a copy of our catalog 17, showing the details of construction of this and other late Racine Cruiser designs. It will pay you to get our figures.

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POWER DORY COMPANY**

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A Small Safe Cruiser 28 ft. Cabin Cruiser will build to order 35 ft. with toilet, sink, oil stove, ice box, running fresh water, tool, dish and clothes locker, sleeping accommodations, large cockpit.



Our Leader 29 ft. Special. The safest little family boat built. Will stand the ocean water. Motor housed in. Prompt shipment. Folder No. 105.



A new model 16 ft. shallow draft fishing boat, low in price. Prompt shipment. Folder No. 102.

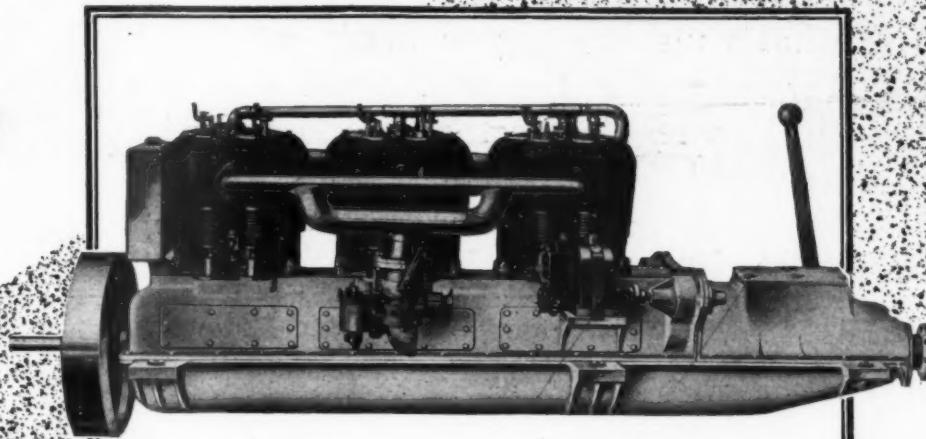


Rowing skiffs 10, 12, 14 ft. in stock. This for outboard motor. Can furnish Wisconsin or Evinrude motor for this boat. Folder No. 102.

FOUR OF OUR LEADERS. THE BEST OF THEIR TYPE. ORDERS MUST BE PLACED EARLY TO INSURE DELIVERY.
OTHER BOATS WE BUILD: SAILING DORIES, FOLDER 106. LIFE-SAVING DORIES, FOLDER 104. 24-FT. DORY-TYPE CABIN CRUISER, 107.
100 CENTS' WORTH OF BOAT FOR EVERY DOLLAR INVESTED.

No patterns or knock-down frames.

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if You Get a*



Wisconsin
CONSISTENT
Motor

THERE are lots of marine motors—of all qualities, types and prices. There are lots of good ones, too, of that medium degree of merit which makes it hard to choose between them. But when it comes to the very high grade class, of which the Wisconsin is at the head, selection by the careful buyer is easy because there are few that need be considered.

WISCONSIN MOTORS HAVE PROVED THEIR EFFICIENCY IN SERVICE

Wisconsin Motors are equalled by few and surpassed by none, in reputation and efficiency. They have proved their merit in racing and in general service so conclusively that there is no question about their ability to perform any kind of service that is required from a marine motor.

Wisconsin Motors have made history from the very first year they were produced. They have won more big events in automobile racing than any other one motor made in America. In motor boat racing they have established a record of consistent and continued success. Many of the most prominent race winners and record breakers of the year and for several years past, including both motor boats and motor cars, have been powered by Wisconsin Motors.

3 3/4 x 5 in. 4 cyl.
4 1/4 x 5 in. 4 cyl.
4 3/4 x 5 1/2 in. 4 cyl.

5 1/10 x 5 1/2 in. 4 cyl. racing
5 2/10 x 7 in. 4 cyl. racing
4 1/4 x 5 in. 6 cyl.

5 1/4 x 7 in. 6 cyl.
5 2/10 x 7 in. 6 cyl. racing
5 1/10 x 5 1/2 in. 8 cyl. racing

Let us send you our complete catalog. You will enjoy reading about Wisconsin victories and Wisconsin construction. Write for it to-day

WISCONSIN MOTOR MFG. CO.

Milwaukee, Wis. U. S. A.

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The Spar Finish
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It is the kind of a varnish you will want to remember, because it lasts longer, looks better and wears better in hard marine use than any other spar varnish. It won't turn white or blue under water, or crack, blister or check and is not affected by the wind, sun, rain, ice, heat or cold.

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MILLER

The Row Boat Motor with a Reversible Propeller

This we believe is without question the latest and highest development in Outboard Motors. The propeller can be changed instantly from forward to reverse or neutral, or forward again, by simply moving the steering lever up or down. It gives the positive safety of control that has never before been possible in portable motors.



With this improvement and many other exclusive features (fully covered by basic patents) added to the already famous Miller Row Boat Motor, it becomes the one predominating motor of this increasingly popular type—the best and most efficient Row Boat Motor on the market.

Furnished with Battery Ignition or Bosch Waterproof Reversible Magneto. Other attachments at extra price.

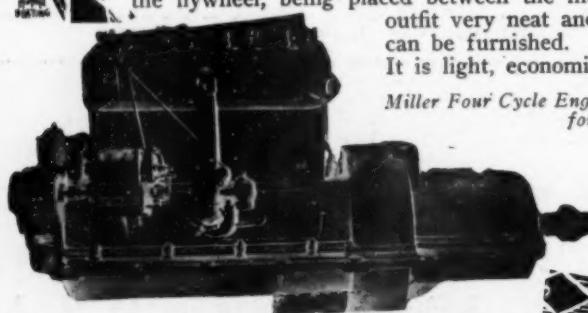
MILLER FOUR CYCLE MARINE ENGINE

Below is illustrated the newest addition to the line of Miller Four Cycle Marine Engines. This model is a true unit power plant with every moving part enclosed—even the flywheel and pump. Cylinders are cast en bloc, and the flywheel, being placed between the motor and reverse gear, gives more direct power and makes the whole outfit very neat and compact. Rear starter or electric starter, kerosene carburetor, etc., can be furnished. There isn't a cleaner, more up-to-date or more serviceable motor made. It is light, economical of fuel and is so strongly made that it will outlast your boat.

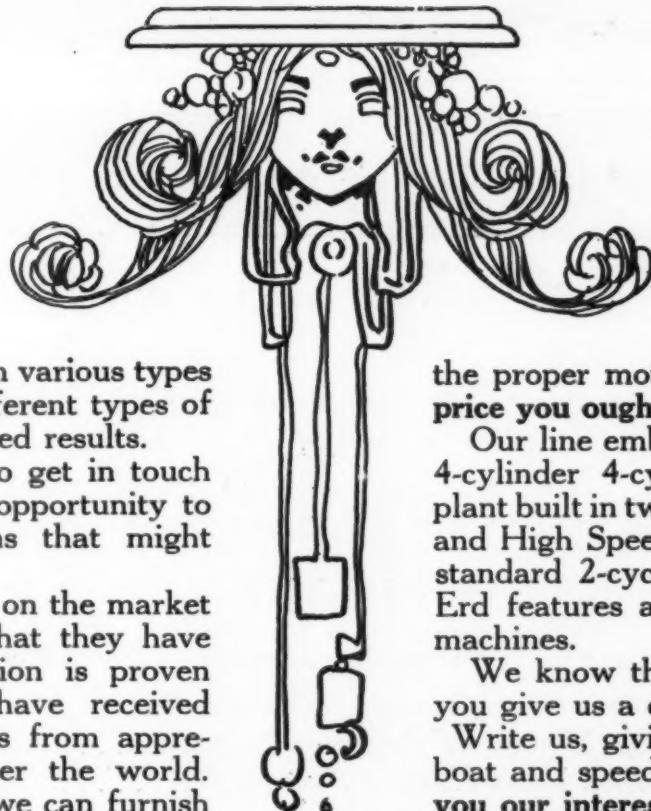
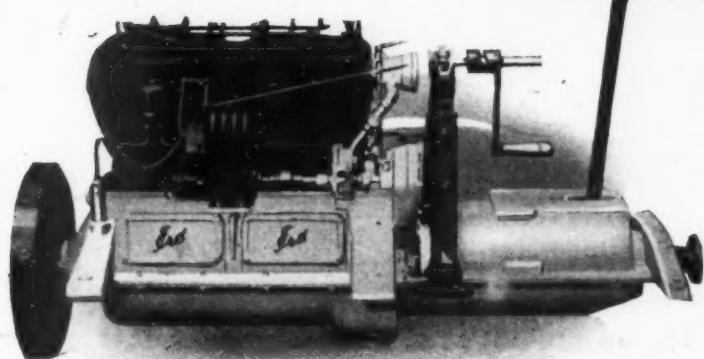
Miller Four Cycle Engines are built in medium duty, semi-speed and heavy duty types with one, two and four cylinders. Write to-day for complete catalog and prices.

Attractive Proposition for Agents

Miller Gas & Vacuum Engine Co.
2329-31 N. Tallman Avenue Chicago, Ill., U. S. A.



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ERD motors are built in various types and sizes to suit different types of boats and give desired results.

It is to your interest to get in touch with us and give us an opportunity to make a few suggestions that might prove valuable to you.

Erd Motors have been on the market for sixteen years, and that they have given universal satisfaction is proven by the fact that we have received thousands of testimonials from appreciative customers all over the world.

Let us show you that we can furnish

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Our line embraces the famous 25-hp. 4-cylinder 4-cycle unit marine power plant built in two types, Iron (Standard) and High Speed (Aluminum), and the standard 2-cycle types with Individual Erd features and featherweight racing machines.

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Erd Motor Company

Saginaw, Michigan, U. S. A.

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Have you one of our highly illustrated catalogues?

We carry a complete line of Motor Boat Supplies at prices that will surprise you. Compare a few of the following prices with those that you have been paying.



Finished 8" brass Bell with bracket.....	\$1.20
Brass Stuffing Box, 1".....	.69
Polished brass 12" Steering Wheel.....	1.15
Life Preservers, Government inspected.....	.80
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Polished brass Electric Searchlight.....	6.00
Schebler Carburetor, 1 1/4".....	7.55
Polished brass Electric Horn.....	3.60

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"SANDS" MARINE SANITARY FIXTURES

"Frisco" Plate S-2045

NEW PUMP WATER CLOSETS

Florida-Electric
Plate S-2018

For use above or below water line

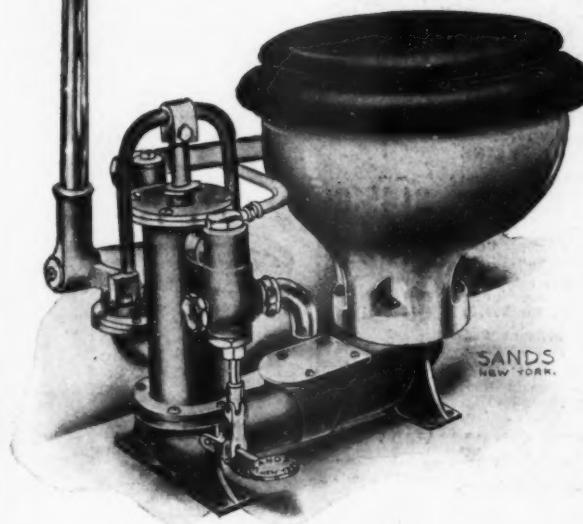
"FRISCO"—A first quality, brand new fixture, designed to meet the demand for a medium priced Pump Closet for use on commercial or work boats.

"FLORIDA-ELECTRIC"—An Electric Pump Water Closet, Highest Type of Efficiency.

Tested and approved by noted Electrical Engineers, Naval Architects, Builders and Owners. Now used successfully on a number of yachts.

"Sands" Fixtures you can trust—Use them and feel safer—Buy them and feel richer—

Built
to
Last.



THE "FRISCO," PLATE S-2045.
(Design Patented—Copyrighted.)

The "Frisco" Pump Water Closet, with special extra heavy Vitro Adamant oval hopper bowl, extra large special rear outlet. Improved high-grade "Sands" non-corrosive composition, THREE (3) INCH combined supply and waste pump. "Sands" Special composition waste arm with check valve. "Sands" Patent Automatic Safety Water Supply Foot Valve. "Sands" Patent Back-Water Discharge Valve. All metal parts smoothed except the detachable metal handle with wood grip which is nickel-plated. Used above or below water line. Furnished with pump, right or left-hand facing, always sent with pump at left-hand, as shown, unless otherwise specified.

Plate S-2045, as described, with oak seat only, no cover.....\$59.00

Plate S-2046, as shown and described, with oak seat and cover.....\$60.00

Dimensions: Width 24 inches, front to back 21 inches, height 17½ inches.

Weight: Approximate—NET, 80 lbs. Shipping, 150 lbs.

GET ACQUAINTED WITH THESE THREE:
Plate S-34 The "Knockabout." The Standard
small closet of the world.

Plate S-2050

The "Bow" Closet. Especially designed for installation in the "Eyes" of small boats, or elsewhere in confined spaces.

Plate S-2061 The "Winner." Meets the demand for a reliable high-grade Closet at a low price.



"FLORIDA-ELECTRIC," PLATE S-2018.
(Design Patented—Copyrighted.)

The "Granby" Round Way Sea Cook for use on discharge pipe of closets. This sea cook is similar to Plate S-126 except water way, which is full round way, thus eliminating the possibility of clogging sea cook.

	Price
1 inch	\$4.00
1½ " "	5.50
1¾ " "	7.00
2 " "	11.00
2½ " "	15.00

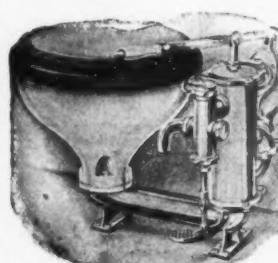
The "Florida-Electric" Improved Pump Water Closet with Vitro Adamant oval pedestal bowl. Improved, high-grade "Sands" non-corrosive composition, FOUR (4) INCH combined supply and waste pump fitted with "Sands" Patent Automatic Safety Supply Foot Valve and "Sands" Patent Back-Water Check Valve. Operated by high-grade electric motor of improved design. All mounted on metal base plate. Can be furnished with pump right or left-hand. Pump and electric motor, finished white enamel, with nickel-plated trimmings, oak woodwork.....\$306.00

If with genuine mahogany woodwork add.....2.50

When ordering specify if wanted for direct or alternating current and voltage.

Dimensions: Width, 22 in. Back to Front, 28 in. Height, 20 in.

Weight: Approximately—NET, 175 lbs. SHIPPING, 250 lbs.



"KNOCKABOUT," PLATE S-34.
(Patented—Copyrighted.)

The "Knockabout" Improved Pump Water Closet, Vitro-Adamant round flush bowl, 2½-in. combined supply and waste pump, "Sands" Patent Automatic Safety Supply Foot Valve, and "Sands" Patent Back-water Check Valve.

Pump rough, finished trimmings, oak seat and cover.....\$49.00

Mahogany seat and cover, add.....1.50

Weight: Net, 45 lbs.; Gross, 75 lbs.



PLATE S-126

The "Glenora" Composition Sea Cook, for use on supply and discharge pipe of closets, straight or bent coupling.

5/8 in.....	\$2.25
1 in.....	3.00
1½ in.....	5.25
2 in.....	8.00

Composition raised strainers, 25¢ extra.



THE "BOW" CLOSET, PLATE S-2050.

(Design Patent Applied For.)
The "Bow" Closet, Vitro-Adamant Bowl, 2½-in. pump, located at rear, fitted with swing handle. Quick opening supply valve. Space occupied, 18 x 24 in. Pump rough, with finished trimmings, oak seat, N. P. \$30.00
Hinges.....Dimensions: Front to back 23 in., width 14 in., height 12 inches.
Net weight, 30 lbs. Shipping, 70 lbs.



THE "ANGLO" COMPOSITION FLANGED SEA VALVES, WITH STRAIGHT COUPLINGS AND LOCKING PLATE, FOR USE ON THE SUPPLY AND DISCHARGE OF SMALL PUMP CLOSETS.

Price per pair with strainer for supply....\$6.00



"WINNER," PLATE S-2061.
(Patented—Copyrighted.)

The "Winner" Pump Water Closet, Vitro-Adamant Round Hopper Bowl, oak seat, N. P. brass hinges, 1½-inch supply and waste pump, "Sands" Special quick opening supply valve.

Plate S-2060 Fixture as described with oak seat.....\$19.00

Plate S-2061 Fixture as shown with oak seat and cover.....20.00

Complete line of closets, lavatories and specialties described in NEW Catalogue "R" ready about January 1st, 1915, sent free upon request.

A. B. SANDS & SON COMPANY

Largest Manufacturers in the World

MARINE PLUMBING SPECIALTIES

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1849—"SIXTY-FOUR YEARS OF QUALITY"—1914

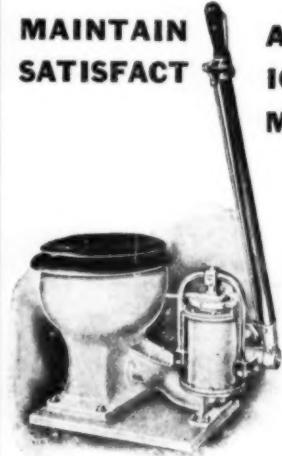
"SANDS" MARINE SANITARY FIXTURES

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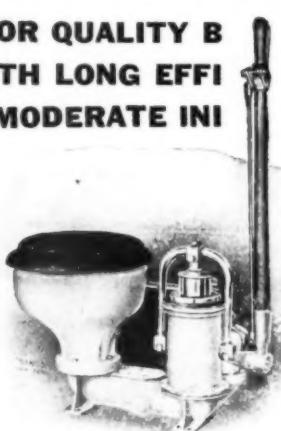
Y GIVING COM PLETE
CIENT SERVIC E AT
TIAL COST.



"NATIONAL." PLATE S-2010.
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"FLORIDA." PLATE S-2015.
(Patented—Copyrighted.)



"HURON." PLATE S-2035.
(Patented—Copyrighted.)



"IOWA." PLATE S-2040.
(Patented—Copyrighted.)



"MARCO." PLATE S-28.
(Patented—Copyrighted.)



"TARPON." PLATE S-2026.
(Patented—Copyrighted.)

The Superior Appointments of These Five (5) High Grade Closets Will
Appeal to Discriminating Owners.

FOR USE ABOVE OR BELOW WATER LINE

Plate S-2010	"National" Pump Closet, Vitro-Adamant Pedestal Bowl, 5" supply and waste pump. Price, pump white and nickel, mahogany woodwork....	\$145.00
Plate S-2035	"Huron" Pump Closet, Vitro-Adamant Hopper Bowl, 5" supply and waste pump. Price, pump white and nickel, mahogany woodwork....	\$132.00
Plate S-2015	"Florida" Pump Closet, Vitro-Adamant Pedestal Bowl, 4" supply and waste pump. Price, pump white and nickel, mahogany woodwork....	\$112.50
Plate S-26	"Manor" Pump Closet, Vitro-Adamant Pedestal Bowl, 4" supply and waste pump. Price, pump white and nickel, mahogany woodwork....	\$100.00
Plate S-2040	"Iowa" Pump Closet, Vitro-Adamant Hopper Bowl, 4" supply and waste pump. Price, pump rough, oak woodwork....	\$85.00

THE QUALITY, CONSTRUCTION, EQUIPMENT AND OPERATION OF
"SANDS" FIXTURES IS THE BEST IN THE WORLD!

Plate S-28	"Marco" Pump Closet, Vitro-Adamant Pedestal Bowl, 3" supply and waste pump. Price, pump rough, oak woodwork....	\$75.00
Plate S-2030	"Mohawk Improved" Pump Closet, Vitro-Adamant Hopper Bowl, 3" supply and waste pump. Price, pump rough, oak woodwork....	\$70.00

SANDS PATENT "BACK WATER CHECK VALVE" AND "AUTOMATIC
SAFETY SUPPLY FOOT VALVE"—TWO SAFETY DEVICES
THAT ABSOLUTELY PREVENT FLOODING

Plate S-31A	"Yukon" Pump Closet, Vitro-Adamant Pedestal Bowl, 2½" supply and waste pump. Price, pump rough, oak woodwork....	\$55.00
Plate S-39	"Utah" Pump Closet, Vitro-Adamant Pedestal Bowl, 2½" supply and waste pump. Price, pump rough, oak woodwork....	\$45.00
Plate S-40	"Crusoe" Pump Closet, Vitro-Adamant Hopper Bowl, 2½" supply and waste pump. Pump rough, oak woodwork. Price....	\$42.50

A NEW PUMP CLOSET ESPECIALLY DESIGNED FOR SUBMARINES

Plate S-2026	"Tarpon" Extra Heavy Reinforced Pump Closet, made specially for submarine vessels. Will discharge against pressure of 75 pounds. Heavy Vitro-Adamant Oval Flushing Rim Bowl, special composition, 3" waste pump, "Sands" Improved Automatic Safety Supply Foot Valve. Pump rough, oak woodwork....	\$135.00
--------------	--	----------

A NEW CLOSET FOR WORK BOATS USED ABOVE WATER LINE ONLY

Plate S-2070	"Commercial" Closet for "Work Boats," Vitro-Adamant Oval Bowl, composition flush valve. Metal parts painted white, with N. P. trimmings, oak seat; no cover. Seat with cover, add \$1.50.	\$47.50
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We recommend
the use of lead or
brass pipe with
wiped or screwed
joints for instal-
lation of all our
fixtures as a san-
itary protection
to health.

DON'T USE
RUBBER HOSE.
IT IS POOR
CONSTRUC-
TION AND UN-
SANITARY.



"YUKON." PLATE S-31A.
(Patented—Copyrighted.)



"COMMERCIAL." PLATE S-2070.
(Patented—Copyrighted.)

Complete line of closets, lavatories, port lights and deck plates described in New Catalogue "R" Ready about January 1st, 1915 sent upon request

A. B. SANDS & SON COMPANY

Largest Manufacturers in the World MARINE PLUMBING SPECIALTIES 22-24 Vesey St., New York, U. S. A.
1849—"SIXTY-FIVE YEARS OF QUALITY"—1914

THE RECOGNIZED STANDARD OF THE WORLD

Partial Display of "Sands" Lavatory Combinations Adaptable to all Kinds and Sizes of Vessels

SPECIAL OUTFITS TO SUIT ANY CONDITION MADE TO ORDER

"SANDS" NEW COMPLETE CATALOGUE READY ABOUT JANUARY 1st. FREE FOR THE ASKING

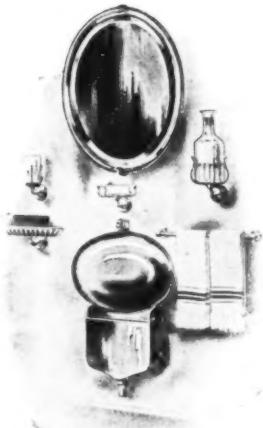


PLATE S-185
"Arena"—N. P. all-copper Folding Lavatory, with waste receiver. \$28.50
N. P. Self-closing faucet for cold water, add \$3.50 for hot and cold water, add \$7.50 with N. P. double-acting Pump, add \$10.50.
ACCESSORIES EXTRA.



PLATE S-150
The "Glenwood" Folding Lavatory, with Vitro-Adamant oval basin, N. P. copper lining, N. P. Copper lining; oak woodwork. \$42.50
Quartered oak, polished finish. \$44.00

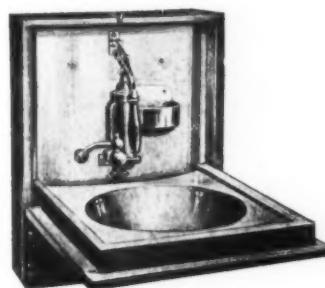


PLATE S-186
The "Aree" Folding Lavatory, N. P. copper basin and slab, N. P. composition single-acting pump. \$38.00
N. P. Copper lining; oak woodwork. \$44.00
Height over all, 10 1/4 inches; width, 15 inches; depth closed, 5 1/4 inches; depth open, 16 1/4 inches; basin 18 inches.



PLATE S-145
The "Hobron" Vitro-Adamant Folding Lavatory, N. P. brass combination self-closing faucet for hot and cold water. \$24.00
N. P. brass waste coupling and towel rack. Complete. \$24.00
Weight: Net, 45 lbs.; Gross, 75 lbs.
Dimensions: Height over all, 26 5/8 in.; width, 16 1/2 in.; depth open, 17 in.; depth closed, 7 in.



PLATE S-252
The "Dallas" Vitro-Adamant Stateroom Lavatory Outfit, with waste jar and N. P. wash cock. Supply Pitcher with N. P. nickel and copper. Price, complete as shown and delivered. \$28.00
The basin measures 17" across the back and 17" front to back.



PLATE S-208

The "Madison" Vitro-Adamant Lavatory, with overlap slab and integral back; self-closing faucet and chrome index "Hot" and "Cold"; chain stay, waste pipe and stopper; cast brass N. P. trap, and waste to bulkhead, with flanges. \$26.00
Dimensions: Slab 20" x 18", basin 14" x 11 1/2, back 8" high.



PLATE S-207

The "Majestic" Vitro-Adamant Lavatory: same as Plate S-208, except with square front. \$26.00



PLATE S-209
The "Marius" Vitro-Adamant Corner Lavatory, integral back, N. P. brass self-closing faucet, china name plate; hot and cold cast brass waste pipe; stopper; chain stay; N. P. half "S" cast brass trap and waste pipe. \$27.00
Dimensions: Length of sides 16 1/4", height of back 6", diameter of basin 14" x 11 1/2".



PLATE S-3056
Folding Lavatory, adjustable plate glass mirror; glassware rack; zinc reservoir and waste receiver; zinc lined painted white enamel; vitro-Adamant basin with splash rim; china soap and brush holders; nickel-plated brass self-closing supply faucet; nickel-plated brass trim. \$26.50
Polished Quartered Oak. \$52.50
Polished Mahogany. \$60.00
Copper Reservoir and Waste Receiver, add. 5.00
Cut Glass Carafe and Tumbler. 4.00
Dimensions: Height, 60" over all; width, 20" over all; depth, when closed, 8"; depth, when open, 22"; capacity of tank, 5 gallons.



PLATE S-3025
The "Alpine" Folding Lavatory, Vitro-Adamant oval basin, with splash rim, Vitro-Adamant soap dishes, metal lining with chrome, self-closing faucet, nickel plated, brass trimmings. Complete as shown and described with oak woodwork, or birch imitation mahogany finish. \$27.50
Dimensions: Height, 20 in.; width, 18 in.; depth closed, 8 1/2 in.; depth open, 22 in.

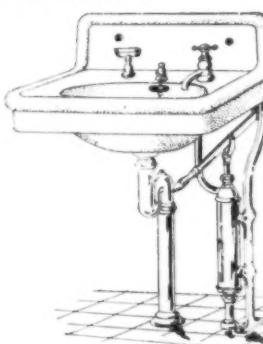


PLATE S-207A
The "Majestic" Vitro-Adamant Lavatory, N. P. Composition Pump, N. P. brass supply pipe, compression faucet, N. P. soap dish, chain stay and rubber stopper. N. P. base self "S" trap with waste pipe to deck. \$37.50

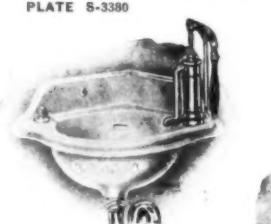


PLATE S-3190
The "Mono 12" Vitro-Adamant Corner Lavatory with N. P. Brass Pump and waste fittings and N. P. Full "S" Trap. \$24.50



PLATE S-3195
The "Macon" Lavatory: same as Plate S-3190, except with faucet instead of pump and without trap. \$9.25



PLATE S-3181
The "Cartier" Brass Outlet Connection, Iron Pipe, 1 in., \$1.75; 1 1/2 in., \$2.50; 1 1/4 in., \$3.75.



PLATE S-3180
The "Mona" Lavatory, same as Plate S-3183, except with faucet, instead of pump and with N. P. Full "S" Trap. \$13.25



PLATE S-3183
The "Manate" 14" Vitro-Adamant Flat Back Lavatory, with N. P. Basin Pump and waste fittings, no trap. \$22.75



PLATE S-3180
The "Menard" Lavatory, same as Plate S-3183, except with faucet, instead of pump and with N. P. Full "S" Trap. \$13.25

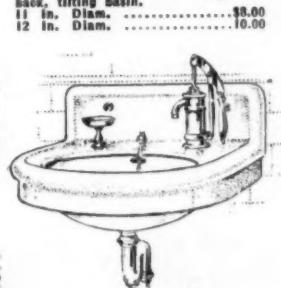


PLATE S-208B
The "Madison" Vitro-Adamant Lavatory, N. P. double-acting pump, N. P. brass full "S" trap, with waste pipe to deck. \$38.00

PLATE S-207B
The "Majestic" Vitro-Adamant Lavatory, same as Plate S-208B, except with square front. \$38.00

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Brass Supply and
Discharge Pump, re-
movable lever, 3-inch
cylinder.
Rough brass
brassings \$25.00
White enamel-
ed, polished
and N. P. trim-
mings \$3.00
Pump is largely
used for discharging
contents and filling
bath tubs, etc.



PLATE 5-739.
Copper Bilge Pump,
brass valves, deck
plate with iron
rod, and wood
handle; length
15" under spout,
and fitted to screw
into 1½" deck plate.
2½" cylinder \$6.50
2½" 6.50
For 1½" brass deck
plate, add 1.00
14.00



PLATE 5-709.
Copper Bilge Pump,
brass valves, deck
plate with iron
rod, and wood
handle; length
15" under spout,
and fitted to screw
into 1½" deck plate.
2½" cylinder \$6.50
2½" 6.50
For 1½" brass deck
plate, add 1.00
14.00



PLATE 5-709.
All Brass Galley
Pump, 1½" in. Cyl-
inder, reversible
handle with shut-off
cock.
Polished \$8.00
Pol. Brass \$8.50
N. P. all over 10.00
2½" 8.00
2½" 13.50
For additional
side outlet, add 1.00
For use in galley,
bilge, sinks, etc.



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Brass Galley Pump,
polished on iron frame,
reversible faucet, handle
with shut-off
cock.
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Pol. Brass \$8.50
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2½" 8.00
2½" 13.50
For additional
side outlet, add 1.00
For use in galley,
bilge, sinks, etc.



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Pol. Brass \$12.50
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supply to basin or
sink.



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inder. For use in
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Special valves, 2" cyl-
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PLATE 5-771.

PLATE 5-1282.
Polished Brass
Lantern Whistles,
4-in. cylinder, 10
in. long.

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New Style Double-Acting
Brass Bilge Pumps, with
foot attachment and 6-ft.
discharge and suction hose
with brass strainer.

No. 1-1½" diam., 15"
long \$3.00

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long 2.50

No. 3, single
ton 2.50

No. 4, chime 2.50

No. 5, single
ton 2.75

No. 6, chime 3.00

\$14.00

PLATE 5-771.

PLATE 5-774.

PLATE 5-771.

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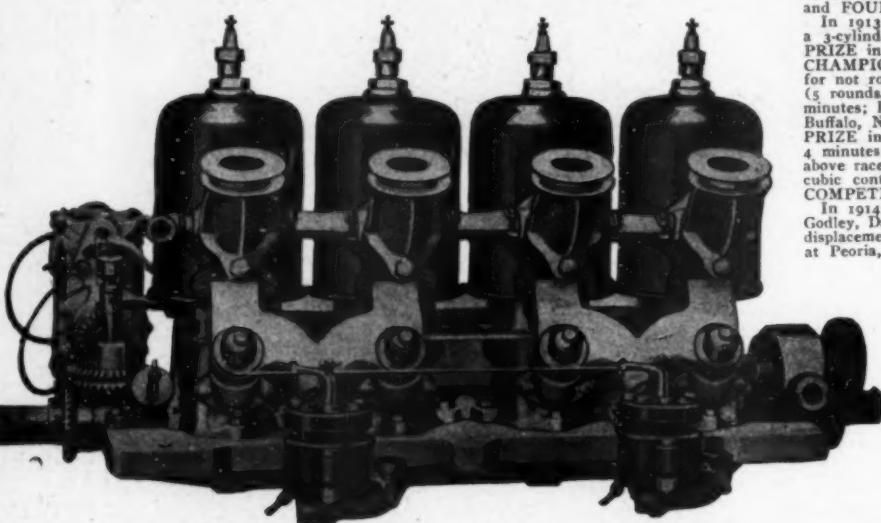
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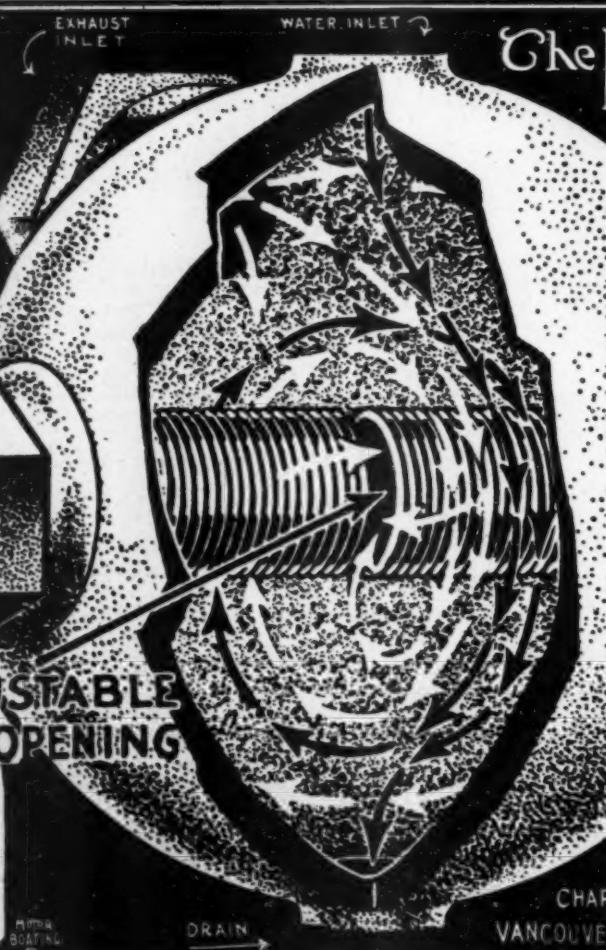


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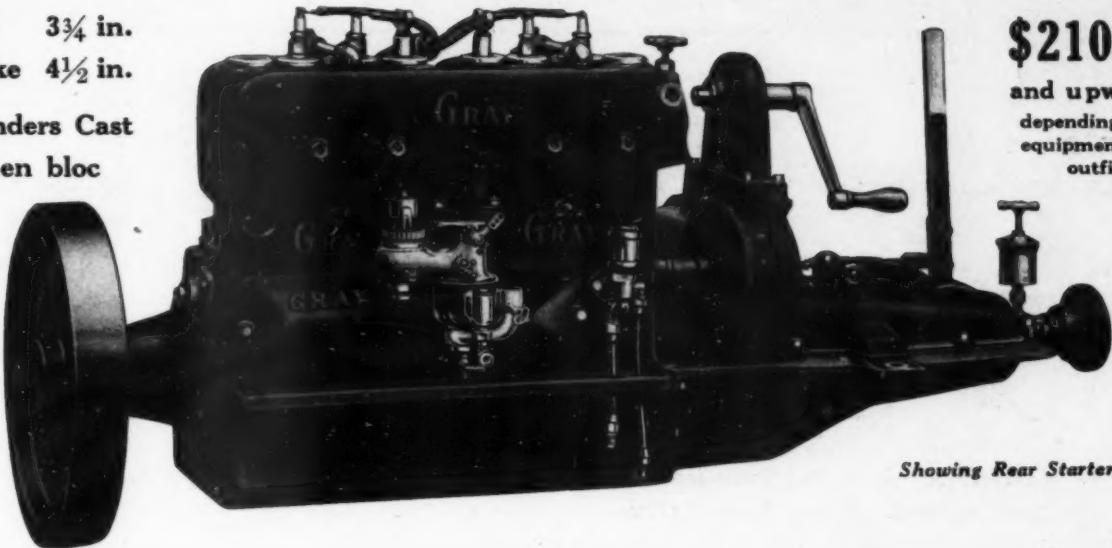
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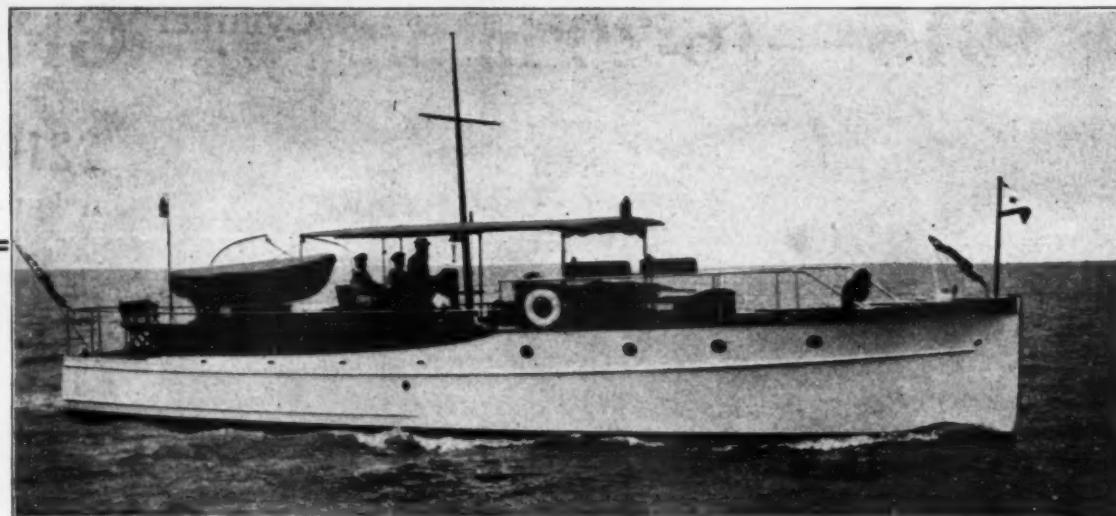
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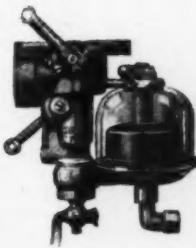
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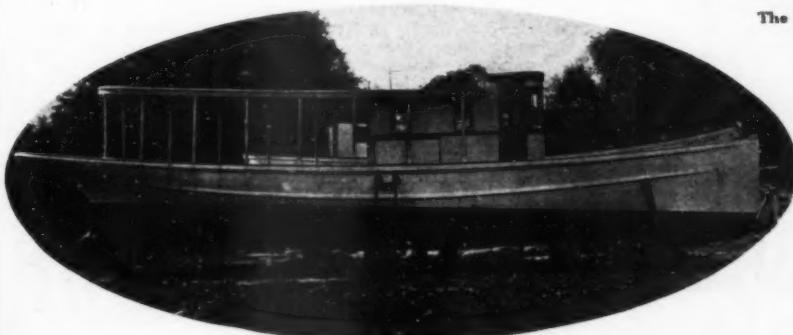
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The "Favorite," Edgewater Park Boat Livery, Cleveland, Ohio



The "Welcome," Edgewater Park Boat Livery, Cleveland, Ohio

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It Means 100% Propeller Efficiency

Install a Gordon

It is as strong as a solid wheel. The blades do not vary, but stay where set. The blades are correct in design and accurate in pitch. Other reversible wheels have only the neutral, full ahead and full reverse. In addition to these you can secure any intermediate pitch or position with the Gordon instantly. No fore and aft movement through the stuffing box, therefore no wear and no leakage. It answers quickly when reversed—will stop a boat running at full speed quicker than any other reverse equipment on the market.

It has a sand-proof hub. It lasts longer, and works easily and smoothly. It is the only wheel practical as an auxiliary—the blades feather perfectly and make no drag. All mechanism easily accessible for oiling. This insures additional life over other reverse propellers. It gives perfect control—this will give longer life to your engine and reduce fuel bills. From full ahead to full reverse at a touch of the lever, without racing or affecting the engine. No danger of stalling the engine.

We should like to tell you more about the GORDON Propeller. Send for free catalog and prices, giving your dealer's name

Pacific Coast Agents

Campbell Hardware Co.
Seattle, Wash.

The Gordon Propeller Company
9006 DESMOND AVENUE CLEVELAND, O., U. S. A.

Atlantic Coast Agents

Beach & Barnard
New York City



WE GUARANTEE

to Give You More Satisfactory Carburetion on Your Engine
than You've Ever Had Before, You to Be the Judge.

Our guarantee is backed up by our offer of 30 Days' Trial at your convenience, the trial not to cost you a cent. If a Kingston Carburetor will increase your efficiency and cut down your fuel consumption (and we know it will) we don't see how you can afford to refuse this free trial.

Write us to-day for full information, Free Trial Offer and Guarantee

BYRNE-KINGSTON & CO., Kokomo, Indiana

New York Office, 1733 Broadway
Detroit Office, 650 Woodward Ave.

Boston Office
99 Haverhill St.

Chicago Office, 1430 Michigan Ave.
Los Angeles, 332 Picco St.

The Kingston Model Y Carburetor was designed especially for the present low grade of gasoline, and gives more power, more speed, easier starting, greater flexibility and more all around satisfaction than any other carburetor.

The Kingston is the best carburetor made, for marine use, because it is absolutely unaffected by weather conditions and has only one adjustment. Even a novice can keep it adjusted for maximum efficiency.

W&M REVERSING PROPELLERS SATISFY

Speedy As a Speed Wheel, Strong As a Solid Casting, Perfect Control Over Speed and Direction

SEND FOR CATALOG NOW

Has the economy been made it seem wise for you to depend on a so-called reversible motor? One accident may cost you many times the cost of a

W & M REVERSING PROPELLER

There are but three working parts, the hub, shell and blades. We guarantee the hub and shell against breakage through the blades striking an obstruction.

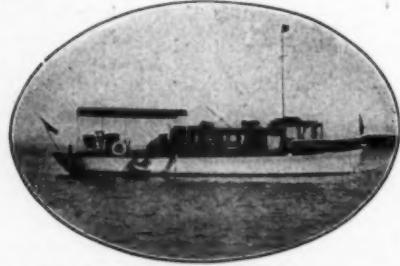
A reversible gear is a complication of many small parts. It's heavy—greasy—dirty. More fit for use overboard as an anchor than for a reversing mechanism in the cockpit of your boat.



My Reversible Engine had spells of forgetfulness.



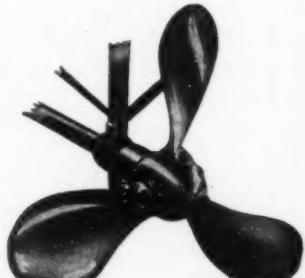
Have used outfit six years. It's fine—B. F. Dandurand.



I have run the 22-inch 3-blade wheel three years. It is most satisfactory.—Neils Toelberg, New York, N. Y.



One small part breaks. The gear balks.



WILMARSH & MORMAN CO., 1169 MONROE AVE., N.W., GRAND RAPIDS, MICH., U.S.A.



APPROVED

BY MEN WHO KNOW

During the past 60 days our factory has been visited by marine, mechanical, automobile and electrical engineers, boat builders, naval architects and engine dealers. Every one of these men came to our factory with but one object in view; that being to ascertain for himself the exact facts about the 1915 Van Blerck models. They wanted to satisfy themselves that all the things said about these engines in the past few weeks were warranted.

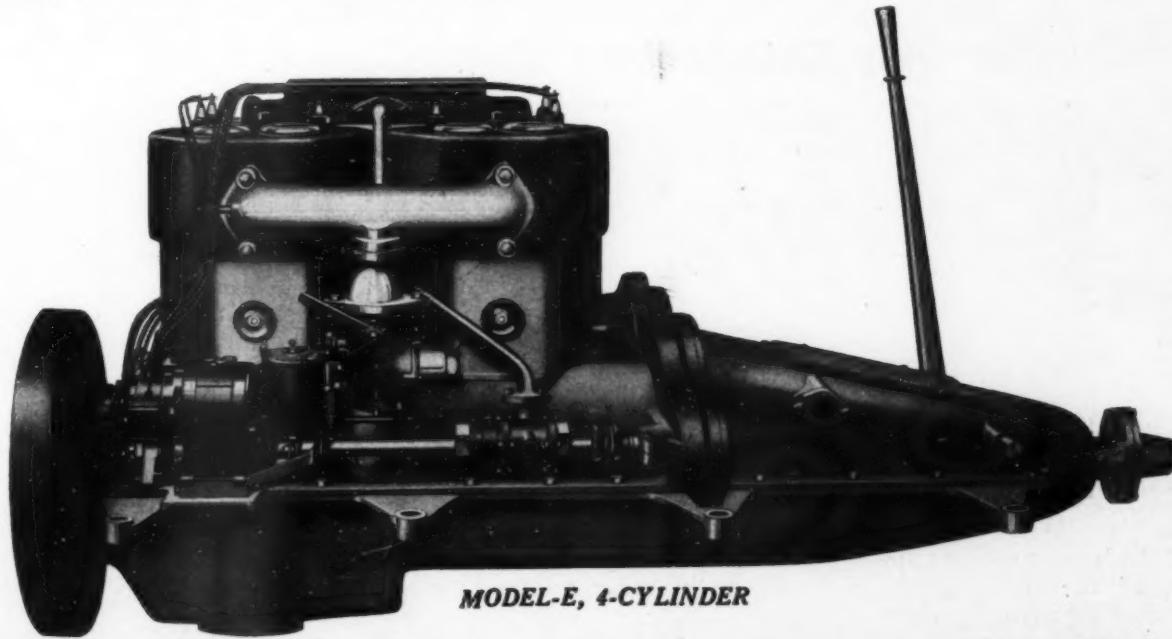
The verdict of these engine experts after having seen these new Van Blercks, subjected them to all-day endurance runs, pulling and brake tests, control tests, fuel and quietness tests, has been as of one mind. Without exception they have pronounced the 1915 Van Blerck models to be years in advance of any engine on the market.

The sincerity of the verdict is not marked by mere words or letters, but is in the most concrete form—bona fide orders. The spring delivery orders on our books now, which have accumulated within the past three months, exceed by 300% the number we ever booked in any previous autumn.

MODEL E.				MODEL E—SPECIAL.				MODEL EE.			
No. of Cylinders.	Rated H. P.	Rated R. P. M.	Net Prices.	No. of Cylinders.	Rated H. P.	Rated R. P. M.	Net Prices.	No. of Cylinders.	Rated H. P.	Rated R. P. M.	Net Prices.
4	65	1200	\$1025	4	90	1600	On application.	2	20	650	\$ 600
6	100	1200	1500	6	135	1600		4	40	650	975
8	135	1200	1950	8	180	1600		6	60	650	1375

Cylinder dimensions of all models are 5 1/2 x 6 inches.

Send for the Van Blerck Bulletin G-10



VAN BLERCK MOTOR CO.
MONROE, MICHIGAN

Kahlenberg & MARINE HEAVY DUTY OIL ENGINES

For severe Heavy Duty service in cruisers, commercial boats, tugs, etc., the Kahlenberg "Semi-Diesel" type engine is so far in advance of other marine power plants that it has no real competitor in efficiency and economy.

The engine operates perfectly on crude fuel oil, kerosene, gas oil, solar oil, etc., as well as on gasoline or distillate. Fuel is injected directly into each cylinder at the proper time by individual fuel injection pumps. Only pure air is taken in at the base. The cost of operation per unit of power is lower than has ever been achieved. The patented internal hot bulbs are adjustable so that the compression can be changed as desired while the engine is in operation.

This Semi-Diesel Engine is started on gasoline or distillate and in two or three minutes, when it has heated the bulbs, the gasoline distillate is turned off and the fuel pumps turned on. Any cylinder can be operated individually if desired.

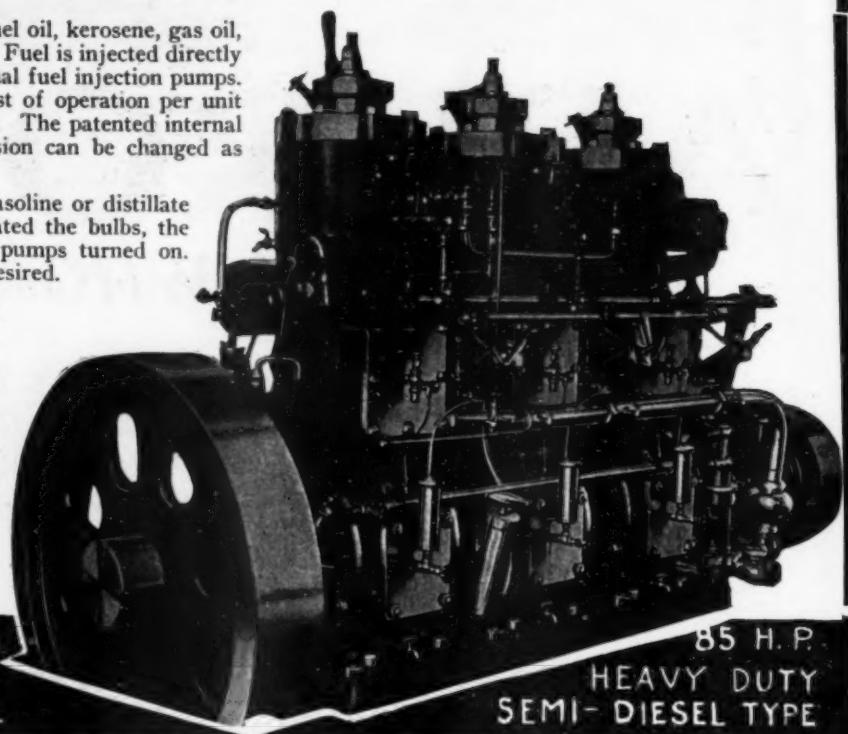
If you want a business engine, built for business, an impartial investigation of the Kahlenberg "Semi-Diesel" will convince you.

We Build Engines from 2 H.P. Up Medium Duty and Heavy Duty

No matter what kind of marine power you need let us tell you the exclusive advantages of the Kahlenberg model which is built for your purpose. There isn't a better engine in design, materials or workmanship. It isn't fair to yourself to buy another engine before you have our catalog.

Write to-day for catalog and booklet "What Users Say."

KAHLENBERG BROS. CO., Mfrs.
12th and MONROE Streets
Two Rivers WIS. U. S. A.



VIPER FIFTH TYPE SURFACE PROPELLERS

VIPER
REG. TRADE MARK

THE SEA SLED
HICKMAN PATENTS

The Only Satisfactory Motor-Speed Boat



24-Foot Sea Sled running at 35 miles an hour in open water.

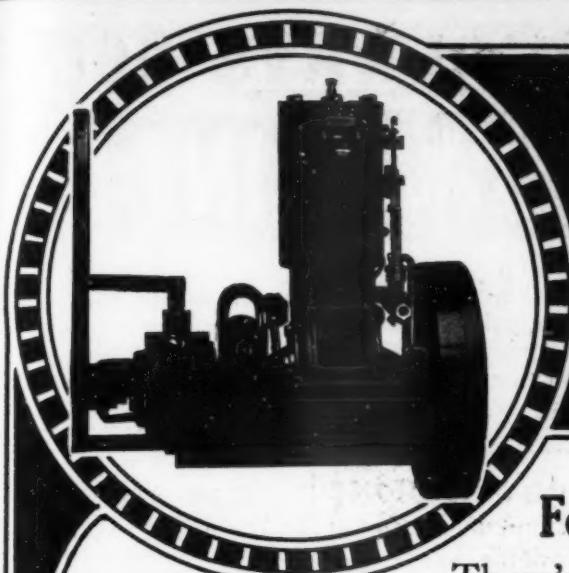
The only boat to carry the number of people you would carry in your car, over ordinary rough water, at the same speed your car would make on land, free from pounding, free from flying water and free from danger.

WATCH THE ONCOMING OF THE SURFACE PROPELLER

New Sea Sled Bulletin ready

MURRAY & TREGURTHA CO.,
340 West First Street, South Boston, Mass.

THE VIPER CO., Ltd.,
PICTON, Canada



HUBBARD MOTORS

For Complete and Lasting Satisfaction

There's genuine satisfaction—complete and lasting—built into the Hubbard Motor. There's service, reliability and durability, the quality of plugging along day after day at full speed with little attention and without complaint. If this is the *kind* of a motor you want, the Hubbard is *the* motor you want.

Some motors are built for speed exclusively and are as delicate as a race horse. Some are built for cheapness and they succeed in achieving that end. The Hubbard is built for steady service and it can be depended upon for this as many hours in the day as you wish, 365 days a year. We want you to get the Hubbard rightly placed in your estimation so that you will give it a trial when you are looking for an engine of this sort.

Good design, honest materials and expert workmanship is put into the Hubbard. Nothing essential is left out and no unnecessary frills or freaks are put in to complicate the construction. It's the kind an engine that suits your own ideals.

Built-in-Ignition system. Positive-Driven, Low Tension Sumter Magneto. No Batteries or Coil Required. Positive Starting. Up-to-the-minute in Design.

Single Cylinder, 2½, 3, 4, 5, 7 and 10 H. P.

Double Cylinder, 7, 9, 11, 15 and 25 H. P.

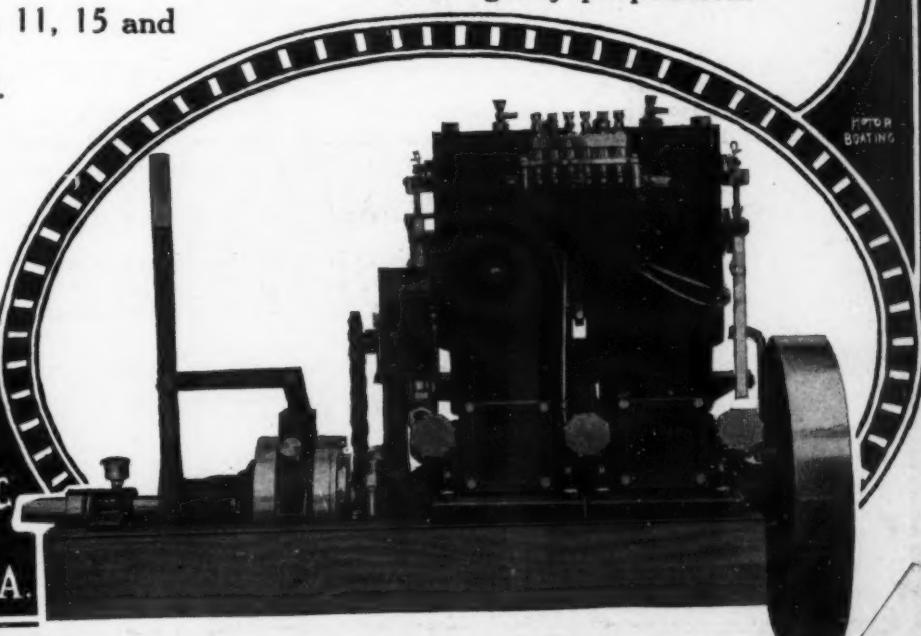
The "Baby," 1½ H. P.

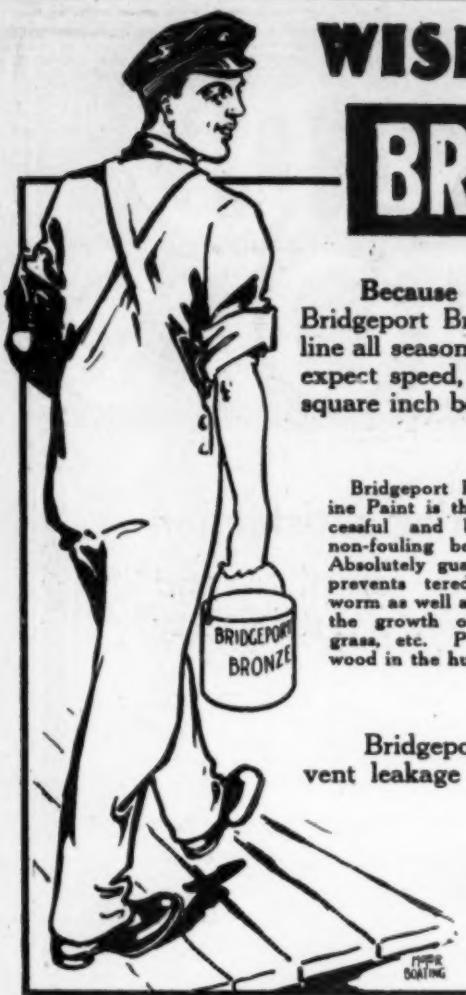
New York &
Philadelphia
Bruns Kimball & Co.

Baltimore
Lassell,
Sterling & Co.

Write for our complete catalog
and agency proposition.

THE
HUBBARD
MOTOR CO Inc
WALL ST
MIDDLETOWN, CONN, U.S.A.





WISE BOATMEN ALWAYS USE BRIDGEPORT BRONZE MARINE PAINT

Because they know that it pays to spend a few cents more per square foot for Bridgeport Bronze, rather than to save on the paint, then spend extra money for gasoline all season to drag around a collection of barnacles, grass and sea growth. You can't expect speed, power or efficiency from a boat that is fouled with these things over every square inch below the waterline.

Bridgeport Bronze Marine Paint is the most successful and best known non-fouling bottom paint. Absolutely guaranteed and prevents teredo or shipworm as well as preventing the growth of barnacles, grass, etc. Preserves the wood in the hull.

Our Famous Stamp

We guarantee to refund the amount of this bill, if at the end of the season there is any sea growth on the bottom of the boat, on which two coats of our B. B. Paint have been properly applied.

Bridgeport Bronze Marine Paint Co.

Bridgeport Bronze Marine Paint saves many times more than its cost as the smooth, frictionless bottom of your boat glides through the water with less effort from your engine, increasing the speed of the boat without straining the engine.

Bridgeport Bronze is now put up in glass jars, which positively prevent leakage and deterioration. Always fresh and in perfect condition.

Write for booklet and prices

Bridgeport Bronze Marine Paint Co.

Cable Address, "Laquero, Bridgeport".

BRIDGEPORT

CONN.



THIS ISSUE

of *Motor Boating* goes to press with a gain of 7,686 agate lines of display advertising over the December, 1913, issue. This showing indicates the healthy condition of the marine industry and of its leading publication—*Motor Boating*.

Motor Boating has the largest guaranteed reader-reaching circulation in the marine field. It thoroughly covers the trade, manufacturers, dealers and thousands of boat owners.

That it is a result-producing circulation is proven by the growth in advertising volume, which in turn is based upon the results manufacturers receive from their advertisements. Motor Boating's readers are the kind who have the money to buy what they want. Make them want your product and they will buy it.

The Economy of a Monthly Journal

Motor Boating gives a full year's advertising in twelve insertions. Your advertisement in each issue lives a full thirty days. The economy of a monthly over publications of more frequent issues is beyond question. Besides accomplishing the full quota with half as many issues, each number of Motor Boating serves as a buying guide. Readers preserve it several months for reference purposes.

January Motor Boating covers the Southern trade at buying season and is also valuable for advance publicity before the big shows of the season

J. S. HILDRETH
Advertising Manager

**MOTOR
BOATING**

119 WEST 40th STREET
NEW YORK CITY

Mason-Jager Engines 7 to 160 H. P.

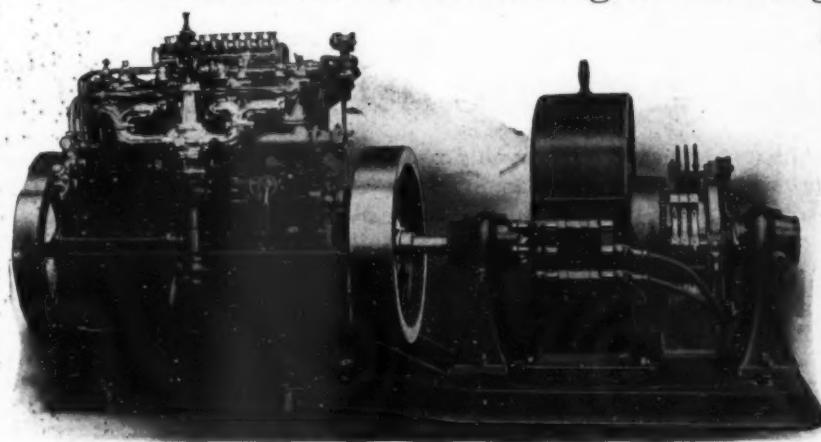
For Marine and Stationary Service, using Kerosene or Gasolene Distillate, Benzole, etc. We have a wide range of patterns that enable us to supply engines for electric generating, air compressing, hoisting and pumping as well as marine duty.

Our New Design Long Stroke high duty type O engine rated 17-25 H.P. at 800 to 1200 R.P.M. combines all the refinements of the best practise in high powered, economical engines of the big valve design.

It meets the need for small cruisers and runabout service equipment splendidly.

We Build Electric Generating Sets for large and small plants from 50

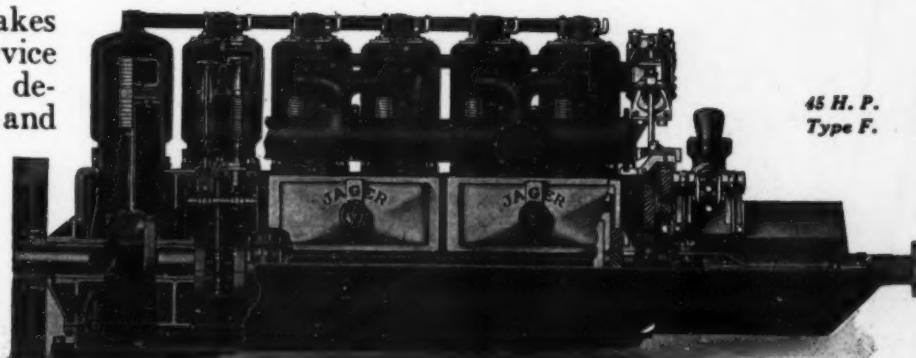
K. W. down to 2 K. W. capacity for lighting, power, telephone and wireless duty. The finest possible service has been shown, giving light as steady as the best central station can furnish. They are used all over the world under widely varying conditions.



15 K. W. Generating Set

Our Marine Engines are built for the hardest kind of hard work for an engine, the steady up hill drag that covers 24 hours a day, nights, Sundays, holidays and week days.

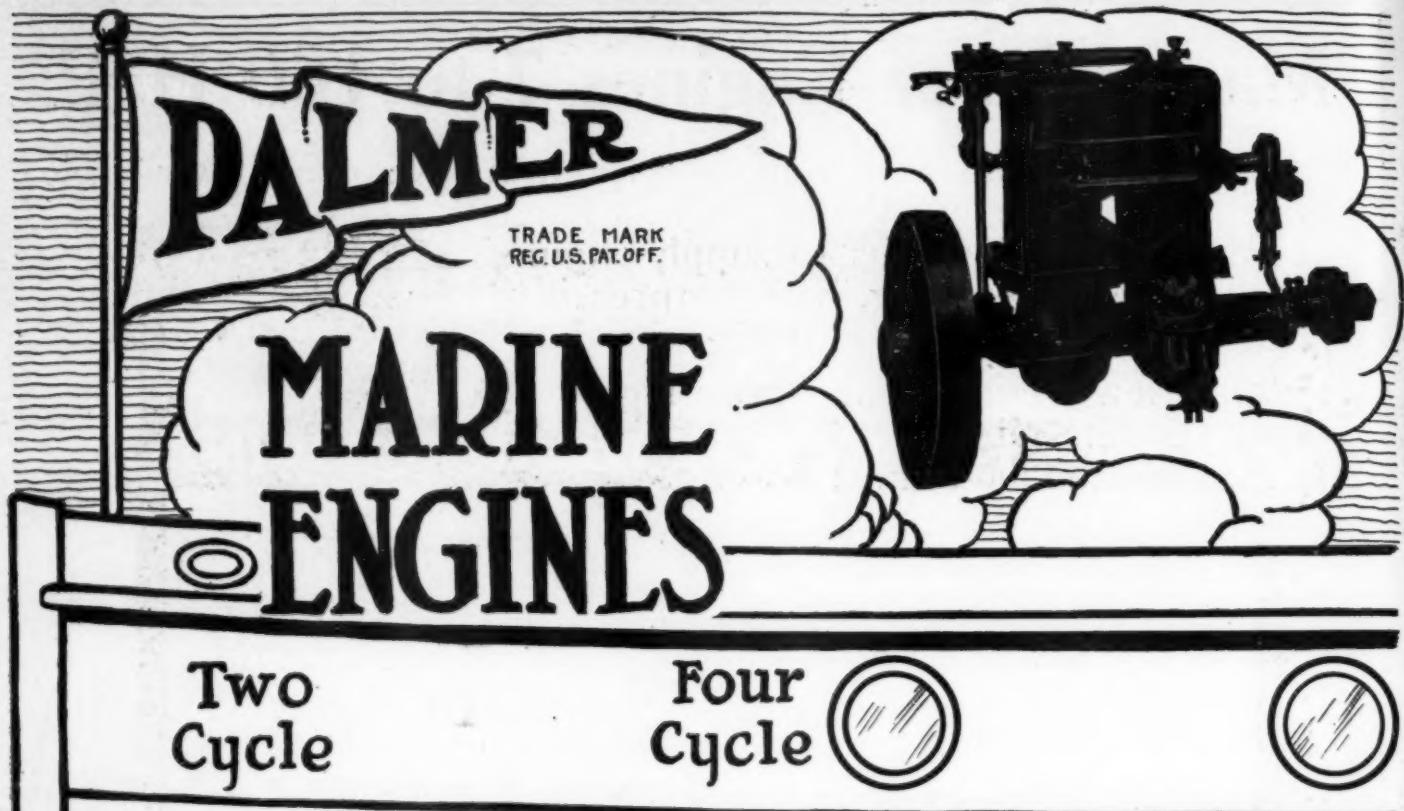
An Engine that makes good in the marine service must be a good engine, designed right, built right and convincingly satisfactory from every standpoint. The Mason Jager engine can't help convincing you, it is an evident fact as soon as you begin to study it.

45 H. P.
Type F.

Our catalog tells you all about it.

JAGER ENGINE CO.

1315 Custom House St., Boston, Mass.



Put a Palmer Engine in Your Boat

It doesn't matter what type of boat you have, how much power you require or what type of engine you prefer. In the Palmer line you can find just the engine you want; we manufacture the most complete range of models and types under one nameplate of any marine engine on the market. We build an engine of the right size and type for every different marine use, from the smallest pleasure launch and yacht tender to the big cruiser and commercial boat.

Palmer Engines are leaders in design and in reliability of service. They have that quality and originality of construction that shows the work of the master designer. We made the first successful two-cycle engine built in New England, and have also been building four-cycle engines for nearly fifteen years. Palmer Engines are pioneers.

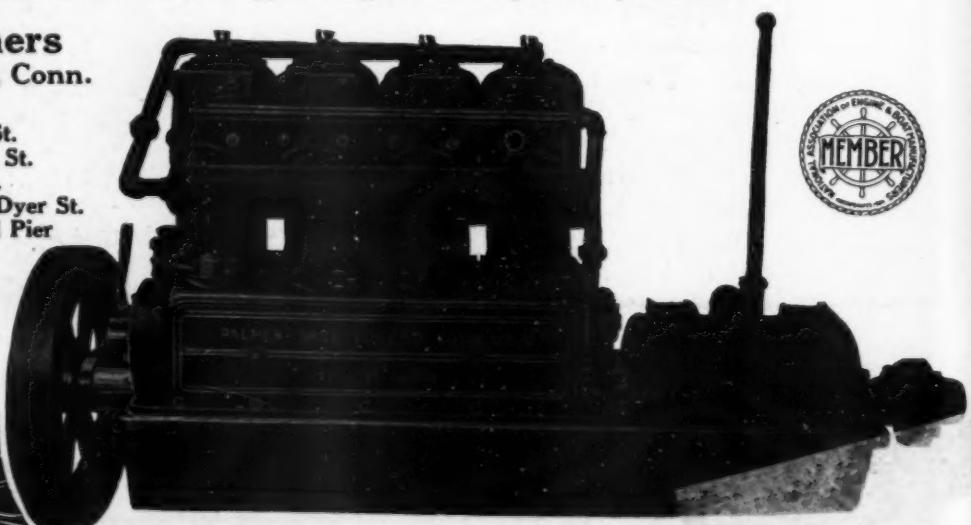
Many ideas and refinements now in general use by other motor builders were first introduced in Palmer Engines. Anyone can copy a good idea, but it takes a master to originate it.

Palmer Two-Cycle Two-Port Engines are built in three sizes, all single cylinder with Make and Break Ignition. Palmer Two-Cycle Three-Port Engines are built in fourteen sizes, including one, two and three cylinders with make and break or jump spark ignition. Palmer Four-Cycle Engines are built in fifteen models, including light-duty, medium-duty and heavy-duty—one, two, three and four cylinders—jump spark or make and break. With 32 different models of marine engines ranging in power from 2 to 50 H.P., we are in a position to advise you honestly and without prejudice. Our experience is at your command.

Write us to-day for copy of our complete catalog. We will be glad to answer any questions as to the size or type of engine best adapted for your boat.

Palmer Brothers
Dept. M. Cos Cob, Conn.

Branch Offices:
New York—31 E. 21st St.
Philadelphia—54 N. 6th St.
Boston—77 Haverhill St.
Providence, R. I.—123 Dyer St.
Portland, Me.—Portland Pier
Baltimore, Md.—
126 Market Place.



FERRO

NEW FOUR CYCLE MARINE ENGINE

The guarantee of the efficiency of the new Ferro Four Cycle Marine Engines is found in the Company behind them. They embody features that have never been commercially available because of their prohibitive cost. This new line of marine engines was made possible only because of our unequalled production facilities, large resources and high priced designing talent. We manufacture practically all the parts for our engines in large quantities, which means standardization, economy of production, quick and inexpensive replacement of parts and lower selling prices.

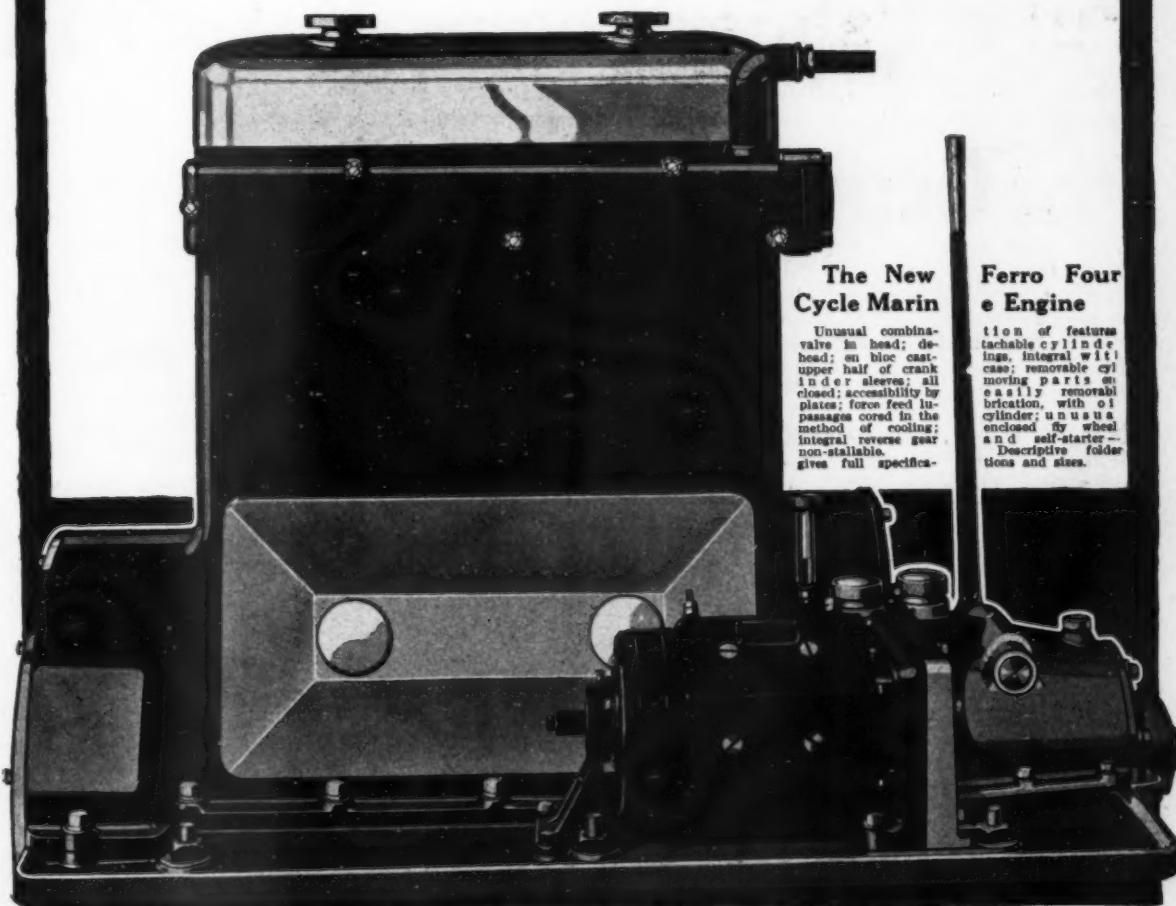
The new Ferro Four Cycle Engine marks a striking advance in the marine engine industry. Back of this new engine is the established reputation of this Company and the satisfactory performance of tens of thousands of Ferro two cycle engines in all parts of the world, under all sorts of working conditions.

We are now appointing agents and assigning territory for the season of 1915 for our complete line of Two Cycle and Four Cycle Marine Engines and Rowboat Motors. Dealers are requested to write us at once stating their facilities for representing us in their community.



THE FERRO MACHINE & FOUNDRY CO.

1210 Hubbard Avenue, Cleveland, O.



The New
Cycle Marin

Unusual combination valve in head; die-head; on base cast iron block; block cylinder sleeves; all closed; accessibility by plates; force feed lubrication; cored in the method of cooling; integral reverse gear non-detachable; gives full specifica-

Ferro Four
e Engine

tion of features; attachable cylinders, integral with cylinder; all moving parts are easily removable; lubrication, with oil cylinder; unusual enclosed flywheel; a new self-starting Descriptive folder

Steer for Carpenter's

for your Marine
Supplies and Motor
Boat Accessories

Don't Load Up

Draw on our complete stocks. We are centrally located. Transportation is quick and cheap. We can give you excellent service and Class A goods. Let us carry your stock for you.

THAT'S OUR BUSINESS

GEO. B. CARPENTER & CO.

430-440 Wells Street, Chicago

"The Great Central Market"

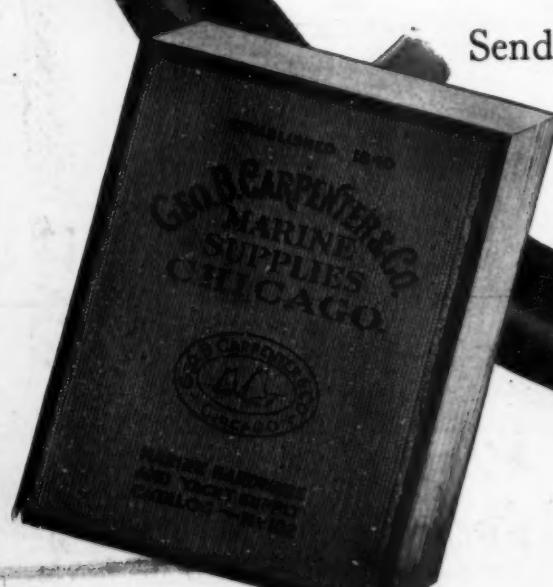
**Manufacturers and Jobbers of Marine Supplies, Motor
Boat Fittings, Boat Tops, Racing Sails, etc.**

*Our Complete Marine Catalog No. 102
is ready for distribution.*

Send 20c. in stamps to cover postage.

We refund this on your
first order.

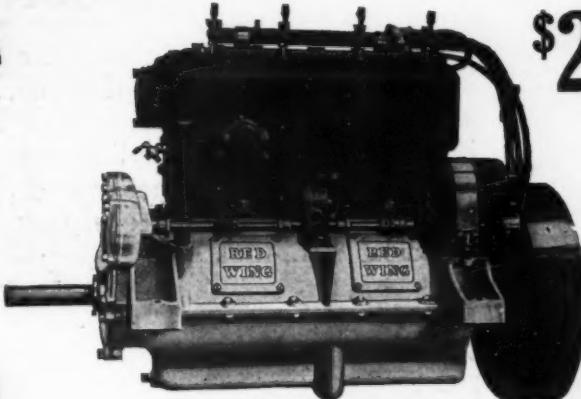
**This is the most important Marine
catalog in the trade.**



Red Wing THOROBRED[®]

THE MOTOR WITH
POWER TO SPARE

\$250



RED WING THOROBRED

IT marks a real epoch in marine engine history when a high grade 4 cylinder 4 cycle motor of the Red Wing Thorobred quality can be bought for \$250. Compare this motor with others of the same type and power, selling at two, three or even four times the price.

Compare not only the prices and specifications, but the design, materials and workmanship. Go deep into the vitals of the motor and consider every detail. Compare also, the service—not merely the reputation claimed by the manufacturer—but the actual results given by the same motor in the same kind of a boat you want it for.

The Red Wing idea in producing the first Thorobred was to build as fine a motor as could be built, and to build it in such quantities as to secure maximum economy in manufacture. The success of our idea, as shown by the number of Thorobreds we have sold, surprised even ourselves. We knew the possibilities, we knew the quality of the motor, but we did not know there were so many customers ready to buy a motor of this size.

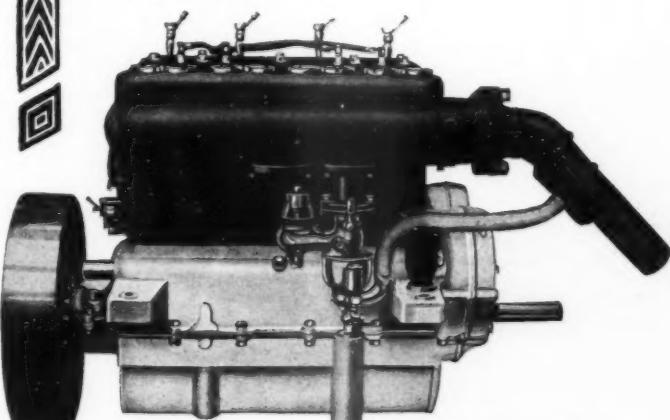
The Red Wing Thorobred is a neat, compact, light, flexible, clean-cut engine. It represents the latest developments and refinements of high-class motor designing. It is built to last, as well as to give great power and speed. All working parts are inclosed, eliminating noise, oil and dirt.

This motor has cylinders cast en bloc, L-head type, bore and stroke $4\frac{1}{16} \times 4\frac{1}{2}$, aluminum crank case and gear housing, positive lubrication by splash and internal pump, rotary water pump, Schebler carburetor, etc. Can be controlled on the throttle from 100 R.P.M. up to 1500 R.P.M., operating perfectly at all intermediate speeds. It gives 24 to 32 H.P., and weighs only 390 pounds, or 440 pounds with reverse gear. Our perfected Kerosene Attachment will give you the same satisfaction as the rest of the motor, and cuts operating cost to the minimum.

Here are the three models of the Red Wing Thorobred:

Model C— $4\frac{1}{16} \times 4\frac{1}{2}$ —24-32 H.P., \$250, Outfit No. 1. \$340, Outfit No. 2.
 Model F— $4\frac{1}{16} \times 5$ —28-36 H.P., \$275, Outfit No. 1. \$365, Outfit No. 2.
 Model B— $4\frac{1}{2} \times 5$ —32-40 H.P., \$350, Outfit No. 1. \$460, Outfit No. 2.

If you have a cruiser, hydroplane, speed boat or fast express runabout you can't find a more suitable or satisfactory motor. Let us send you all the details of the new 1915 "Thorobred" unit power plants, before you decide.



THOROBRED MOTOR WITH KEROSENE BURNING ATTACHMENT

For other types of boats we build two-cycle motors of one and two cylinders, from 3 to 16-20 H.P. Also five models of four-cycle Heavy-Duty Motors, from 8 to 36 H.P.

Write us to-day for catalog and full details.

Red Wing Motor Co.
Dept. B, Red Wing, Minn., U.S.A.

Peerless Engines

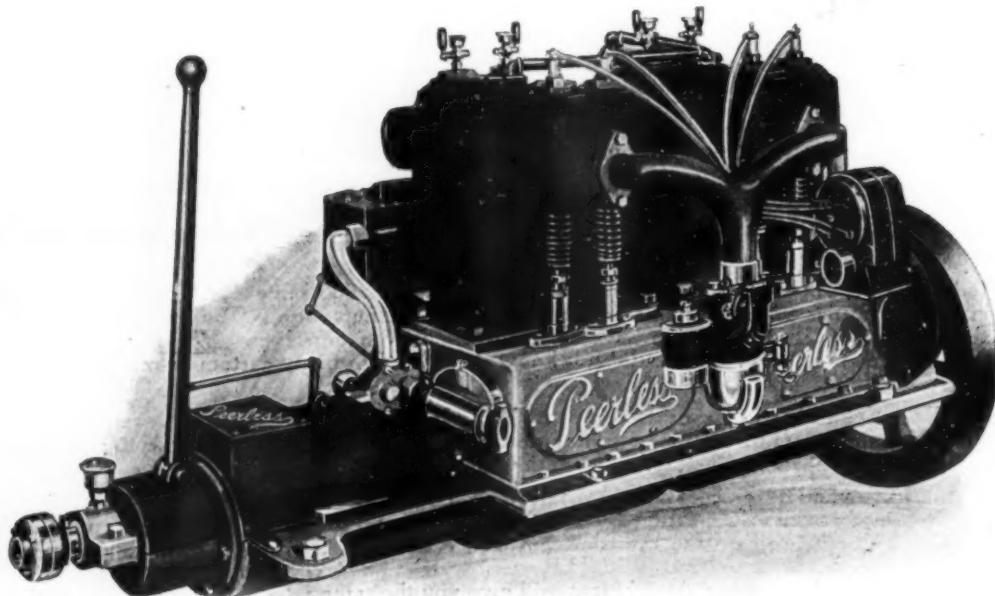
"The Engine That Makes Good"

ANNOUNCEMENT

WE are pleased to announce that the unparalleled success of the present line of "Peerless Engines" has made it possible for us to manufacture a Medium to Heavy Duty Motor in both two and four cylinder models that will be sold at a popular price. These engines are of the same simple design, and are built in the same careful manner that is characteristic of all "Peerless Engines."

Prices for the New Medium to Heavy Duty Peerless Engines

4-Cyl. 40-50 H.P. with Reverse Gear Complete engine equipment,	\$600.00
2-Cyl. 20-24 H.P. " " " " " " " " 375.00	



Prices for the Standard Peerless Engines

4-Cyl. 25-35 H.P. with Reverse Gear Complete engine equipment,	\$450.00
2-Cyl. 12-16 H.P. " " " " " " " " 275.00	
4-Cyl. 16-20 H.P. with Reverse Gear Complete engine equipment,	\$360.00
2-Cyl. 8-10 H.P. " " " " " " " " 240.00	

The opening of the 1915 season still finds the "Peerless" far in the lead, its simple design, the sturdy, clean-cut appearance, perfect accessibility and its enviable reputation for unfailing service under the most trying conditions has made thousands of friends in all parts of the civilized world where power boats are used.

Refinements in the standard models

It is our constant aim to keep the "Peerless" years in advance; "good enough" are words never used at the Peerless Factory. Practical experience with motors in actual service suggests many improvements; after careful consideration and a thorough testing we adopt any of such refinements that will prove their real merit in actual service. The following features will be found among the improvements for 1915. The Detroit Force Feed Oiler will have two additional feeds that will lubricate the main bearings; this will eliminate all grease cups. It will also be driven with an eccentric and ratchet making a positive drive. The location of the Dual Magneto has been changed to the forward part of the motor and is driven independent of the pump. The Model "L" Schebler carburetor will be supplied as standard equipment in place of the Model "D."

PEERLESS MARINE MOTOR CO.

Buffalo, N. Y., U. S. A.

Preliminary

Notice

A Revolutionary Development in Row Boat Motors

The Spinaway Boat Motor Company will very shortly be able to announce comprehensive details of *new* developments in row boat motor construction and design.

Innovations that will strongly appeal to you—and all those who are enthusiastic over the *possibilities* of motor-row-boating—but whom the devices now purchasable fail to adequately satisfy.

Complete details will be released December 10th. Your interest in motor-row-boating urges you to obtain same by addressing

**Spinaway Boat Motor
Company**
301 A Street Freeport, Ill.



MARINE ENGINES

ESTABLISHED 1900

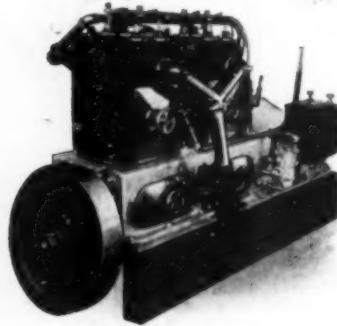
WE HAVE a type of engine, and a size particularly suited to every requirement in the marine field.

The G (Lambkin) Model, is a light weight high speed Runabout engine of the long stroke type, $3\frac{3}{4} \times 5\frac{3}{4}$ in., built in 4 and 6 cylinders and may be equipped with rear starter or electric starter and generator. 800-1200 RPM.

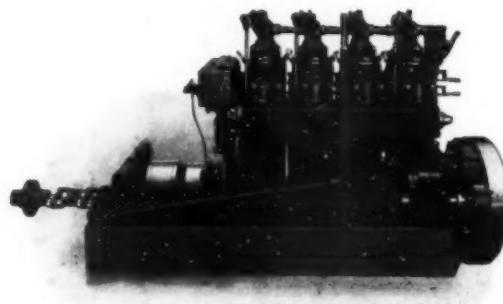
The R Model is a Medium Duty, Medium Weight, $5\frac{1}{4} \times 6$ in. motor built in 2, 4 and 6 cylinders. 600-700 RPM.

The F Model Medium Heavy Duty, Long Stroke, $4\frac{1}{2} \times 6\frac{3}{4}$ in. cylinders. All moving parts are exceptionally heavy. Built in 2, 4 and 6 cylinders. 600-900 RPM.

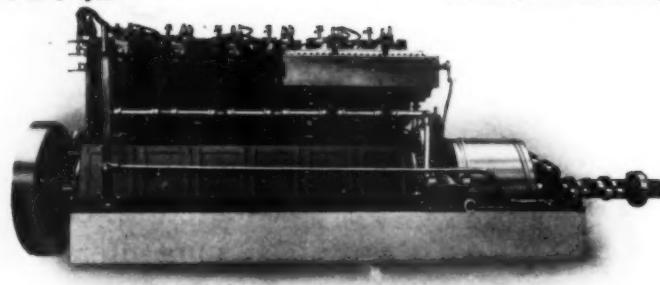
The H Model Heavy Duty, $6\frac{5}{8} \times 7$ in. cylinders, is built in 4 and 6 cylinders. 400-500 RPM.



G Model (Lambkin), 4 & 6 cyls.



F Model, Medium Heavy Duty, 2, 4 & 6 cyls.



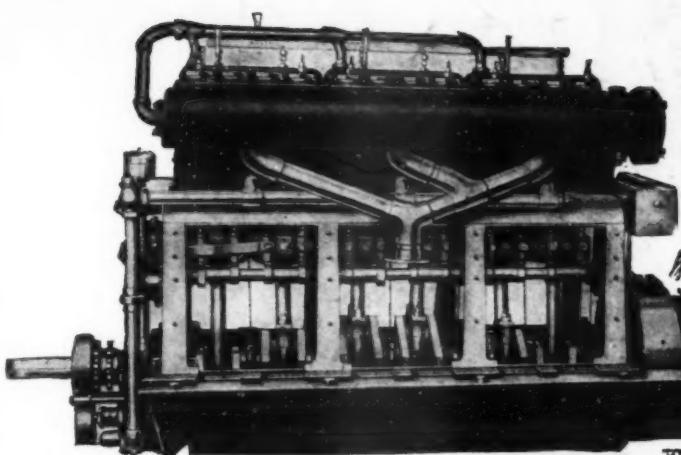
R & H Models, Medium and Heavy Duty
These two models are identical in design

Let us mail you, without cost, our handsome 40 page catalog, describing in detail the various models.
"Co-Operation a LAMB Quality"

We maintain for our Eastern customers, a factory branch offices in New York City, Room 807, Hudson Terminal Building, 30 Church St., and a Service Shop and Storage Warehouse, 22 Morris St., Jersey City. Engines of all sizes in stock, also repair parts for quick service, for all models.

Members National Assn., Engine & Boat Mfrs.

LAMB ENGINE COMPANY **Clinton, Iowa, U. S. A.**



“THE
MOTOR
THE LIFE
SAVERS
USE”

HOLMES

The Holmes Motor is a type which is as separate and distinct from the ordinary marine motor as the present day life boat is different from the ordinary launch. Combining all the advantages and refinements found in other power plants the Holmes has progressed to a point which achieves positively unequalled results in operation, durability and economy of maintenance.

Holmes Motors are exclusively specified in the 36 ft. motor life boats where absolute reliability is more important than any other consideration. These motors are regularly subjected to the most severe conditions of service, and they must be ready at all times to withstand these conditions without thought of failure.

The rest of the Holmes product is used in fine yachts and important commercial boats where life boat reliability is demanded by the owner.

We do not believe there is any marine power plant in existence which has earned a higher regard from all who have used it.

Buy Your Motor Boat as You Do Your Automobile and Hold One Manufacturer Responsible

The Holmes McLellan Lifeboat Cruiser is the most highly developed form of power boat ever designed. It is as nearly infallible as any man-made production, designed to overcome the forces of nature, can be. This a refinement of the open cockpit type, over a hundred of which are in use by the Life-Saving Services of the United States and Canada.

This boat is Non-Sinkable, Self-Righting and Self-Bailing. Launched bottom side up with block and fall in tests, it rights itself as soon as the tackle is loosed. With cabin compartment pumped full of water the motor drives it along, at reduced speed to be sure, but sufficiently fast to show that the safety of the boat and reliability of the motor is unaffected.

The Lifeboat is regularly equipped with a 20-25 H.P. Holmes Motor mounted in an entirely separate fireproof compartment. Speed 9½ miles an hour. Watertight bulkheads and air cases provide more than enough buoyancy to float the boat if stove.

*Write for full details of Holmes Motors and Holmes McLellan
Lifeboat Cruisers for pleasure and commercial purposes*

In localities where we have no agent, the first purchaser of a Holmes motor will be given the agent's discount

The Holmes Motor Company, Inc.,

50 State Street, Boston, Mass.
Works at West Mystic, Conn.





The Sterling Engine Company offers not only the *highest grade* marine engine, but also the *most complete line* of really high-class marine engines on the market. The following list includes the one *right* engine for every size and type of boat requiring from 6 to 225 H.P. Select the engine for *your* next boat from this line.

MEDIUM DUTY and SPEED ENGINES

Model.	No. of Cylinders.	Bore.	Long Stroke.	600 R.P.M.	Conservative Ratings.		
					1000 R.P.M.	1200 R.P.M.	
E-10	4	2 $\frac{1}{2}$ "	4 $\frac{1}{2}$ "	6 H.P.	10 H.P.	12 H.P.	
E-25	4	3 $\frac{1}{2}$ "	5 $\frac{1}{2}$ "	17 H.P.	25 H.P.	30 H.P.	
B-20-35	4	4 $\frac{1}{2}$ "	5 $\frac{1}{2}$ "	20 H.P.	35 H.P.	45 H.P.	
B-35-55	4	5 $\frac{1}{2}$ "	6 $\frac{1}{2}$ "	35 H.P.	55 H.P.	67 H.P.	
B-50-85	6	5 $\frac{1}{2}$ "	6 $\frac{1}{2}$ "	50 H.P.	85 H.P.	100 H.P.	
B-115	8	.....	6 $\frac{1}{2}$"	.....	115 H.P.	145 H.P.	

*These engines can be equipped with either iron or Steraloy bases.

HEAVY DUTY ENGINES

Model.	No. of Cyl.	Bore.	Long Stroke.	400 R.P.M.	500 R.P.M.
C-8	2	4 $\frac{1}{2}$ "	6"	8 H.P.	10 H.P.
C-12	2	5 $\frac{1}{2}$ "	7"	12 H.P.	15 H.P.
D-12**	2	5 $\frac{1}{2}$ "	7"	12 H.P.	15 H.P.
D-25	4	5 $\frac{1}{2}$ "	8"	25 H.P.	35 H.P.
D-45	4	6 $\frac{1}{2}$ "	9"	45 H.P.	56 H.P.
D-70	6	6 $\frac{1}{2}$ "	9"	70 H.P.	85 H.P.
D-145	8	8 $\frac{1}{2}$ "	10"	165 H.P.	200 H.P.

*Special Fisherman's Engine.

SPECIAL HIGH SPEED ENGINES

Model.	No. of Cyl.	Bore.	Long Stroke.	1200 R.P.M.	1500 R.P.M.	1700 R.P.M.
R-50	4	4 $\frac{1}{2}$ "	5 $\frac{1}{2}$ "	45 H.P.	50 H.P.	55 H.P.
R-90	4	5 $\frac{1}{2}$ "	6 $\frac{1}{2}$ "	75 H.P.	90 H.P.	110 H.P.
R-135	6	5 $\frac{1}{2}$ "	6 $\frac{1}{2}$ "	115 H.P.	135 H.P.	150 H.P.
R-225	8	5 $\frac{1}{2}$ "	6 $\frac{1}{2}$ "	185 H.P.	225 H.P.	250 H.P.

This is the complete line of Heavy Duty, Medium Duty, Speed and High Speed Engines offered by the Sterling Engine Company for the Season of 1915. Every engine is designed and built for a specific work. Every engine has been thoroughly tried out and has an unbroken record of successful performance behind it.

Every engine listed above is a "finished product." There are no experiments, no untried ideas, but complete units capable of efficiently and consistently doing the work required of them. Every Sterling Engine is simple, compact and get-at-able. Every Sterling Engine is backed by the Sterling Guarantee and the Sterling Reputation.

The list given above is the strongest argument we can put forward to prove our statement that there is a Sterling Engine designed and built to meet the exact requirements of every Motor Boat Owner.

The 48 page Sterling catalog gives full details regarding the complete line. Write for it to-day.

The Sterling Engine Co.
1254 Niagara St. Buffalo. N.Y.

